



LCD-Monitor

Chassis
LS32BHP

Model
320PX

SERVICE Manual

TFT-LCD Monitor



Feature

- ▶ VMB (Vertical Marketing Business) Model
- ▶ MFM (Multi Function Monitor) :
Compatible with various sources including PC (DVI, AV, S-video, Component)
- ▶ Adopting Response Time 8ms SPVA
- ▶ SRS Trusurround supplied
- ▶ RS232 Remote Control
(MDC software supplied)
- ▶ Video Input : PC(D_SUB,DVI), BNC, DVI, Component, AV, S-Video
- ▶ Audio Input : PC(D_SUB,DVI) Stereo, Video (AV, S-Video) , Component, BNC
- ▶ Video & Audio Output : PC, BNC, AV, S-Video, Component Output, Speaker Output
- ▶ 10W x 2 External Speaker
- ▶ PIP On timer function : The PIP automatically pops up after the time setting
- ▶ PIP, OSD Menu Transparency Adjustment
- ▶ Off timer function
- ▶ Wall & Ceiling Mounting
(Optional VESA Wall Mount Kit)

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LS32BHP Service Manual

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1 Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1 Safety Precautions

1-1-1 Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2 Servicing the LCD Monitor

1. When servicing the LCD Monitor, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3 Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):

WARNING : Do not use an isolation transformer during this test.

Use a leakage current tester or a metering system that complies with American National Standards Institute (*ANSI C101.1, Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).

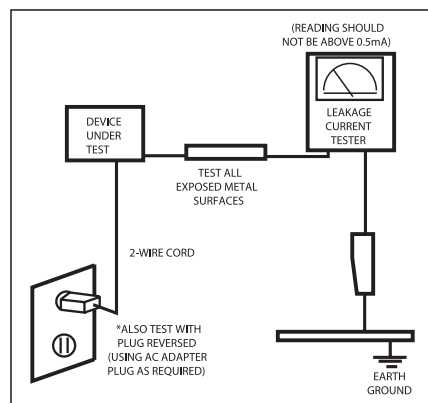


Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by \triangle on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1 Precautions

1-2 Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.

Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
(a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.
The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Static Electricity Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the high-voltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

1 Precautions

Memo

2 Product specifications

2-1 Development Background

- Expansion of Wide LCD Product Market (Public facilities like airport, theater, etc.)
- Improving the picture quality and enhancing the extra features compatible to the current model
- Securing competitiveness with the strengthen Network Option and keeping up the user convenience

2-1-1 Fashion Feature

- ▶ VMB (Vertical Marketing Business) Model
- ▶ MFM (Multi Function Monitor) :
Compatible with various sources including PC (DVI, AV, S-video, Component)
- ▶ Adopting Response Time 8ms SPVA
- ▶ SRS Trusurround supplied
- ▶ RS232 Remote Control (MDC software supplied)
- ▶ Video Input : PC(D_SUB,DVI), BNC, DVI, Component, AV, S-Video
- ▶ Audio Input : PC(D_SUB,DVI) Stereo, Video (AV, S-Video) , Component, BNC
- ▶ Video & Audio Output : PC, BNC, AV, S-Video, Component Output, Speaker Output
- ▶ 10W x 2 External Speaker
- ▶ PIP On timer function : The PIP automatically pops up after the time setting
- ▶ PIP, OSD Menu Transparency Adjustment
- ▶ Off timer function
- ▶ Wall & Ceiling Mounting (Optional VESA Wall Mount Kit)

2. Product Specifications

2-2 Specifications

Item		Description
LCD Panel		AMLCD 32" (LTA320WT-L16)
Scanning Frequency	Horizontal	30~70kHz
	Vertical	50~85Hz
Display Colors		16.7 Million colors
Maximum Resolution	Horizontal	1366 Pixels
	Vertical	768 Pixels
Input Video Signal		0.7 Vp-p \pm 5% positive at 75 Ω , Digital, TMDS internally terminated
Input Sync Signal		Type : separate H/V sync, Composite, automatic synchronization without external switch Level : TTL level
Active Display Horizontal/Vertical		871.68 \pm 3 mm (H) / 523.008 \pm 3 mm (V)
AC power voltage & Frequency		AC 90~264V, 60 Hz/50 Hz \pm 3 Hz
Power Consumption(DPMS)		160W(w/o option), 5W(DPMS)
Brightness		450cd/m ²
Contrast Ratio		1200:1
Response Time		8ms(by DDC2)
Range of vision angle (Left/Right/UP/Down)		89 ° / 89 ° / 89 ° / 89 °
PC Input		D-SUB, DVI
Video System		AV, S-Video, Component
Sound Output		Max.10W x 2ch
Dimensions (W x H x D)		
Set		780 x 482 x 107 mm / 30.1 x 19.0 x 4.6 inch 780 x 530 x 223 mm / 30.1 x 20.9 x 8.8 inch
Weight (Set/Package)		16Kg (without Stand) 18Kg (with Stand)
Environmental Considerations		Operating Temperature : 50° F ~ 104° F (10°C ~ 40°C) Operating Humidity : 10% ~ 80% Storage Temperature : -4° F ~ 113° F (-20°C ~ 45°C) Storage Humidity : 5% ~ 95%
-Designs and specifications are subject to change without prior notice.		




2-3 Spec Comparison to the Old Models

Model		LS32BHP	LBE32PS
Design			
Panel		32"(1366x768),SPVA	32"(1366x768), PVA
Panel Spec.		450cd/m ² , 1200 : 1, 178/178, 8ms	450cd/m ² , 1000 : 1, 178/178, 8ms
Input	PC	D-Sub, DVI-D, BNC	D-Sub, DVI-D, BNC
	Video	S-video, CVBS, Component	S-video, CVBS, Component
	Speaker	10 Watts x 2 ch SRS Trusround	10 Watts x 2 ch VR Dolby, BBE
	Funtion	.Power On Delay .Network Option .Safety Screen .Monitor information (S/N) .Video Wall .MDC	.PIP/PBP, DNle .MDC Program .VESA Wall Mount .Remote Control






2. Product Specifications

2-4 Accessories

Product	Description	Ccde. No	Remark
	Quick Setup Guide	BN68-01021D	
	Warranty Card (Not available in all locations)	BH68-00527A	
	User's Guide, MDC software, Natural Color software, MagicNet software	BN59-00528D	
	D-Sub(15 Pin) Cable	BN39-00244B	
	Power Cord	3903-000067	
	Speaker Wire Cable	BN39-00530A	
	BNC to RCA Adapter Jack × 4	3705-001262	
	Semi Stand	BN96-00452E	
	Screw (4EA) TAPTITLE : M4 × L15	6003-001026	

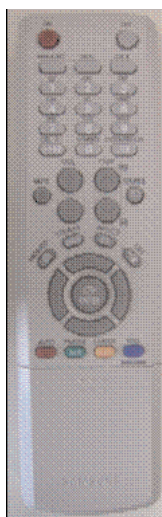
Product	Description	Ccde. No	Remark
	Remote Control	BN59-00489A	
	Batteries (AAA x 2)	4301-000121	
	Cover-Hole	BN96-00597D	

2-5 Accessories(Sold Separately)

Product	Description	Ccde. No	Remark
	Wall mount KIT		Model: WMB-4050P
	Speaker Set	BN96-01806A	
	Stand KIT	BN96-00428C	
	DVI Cable	BN39-00246F	
	RS232C Cable	BN39-00341A	

3 Alignment and Adjustments

3-1 Service Mode

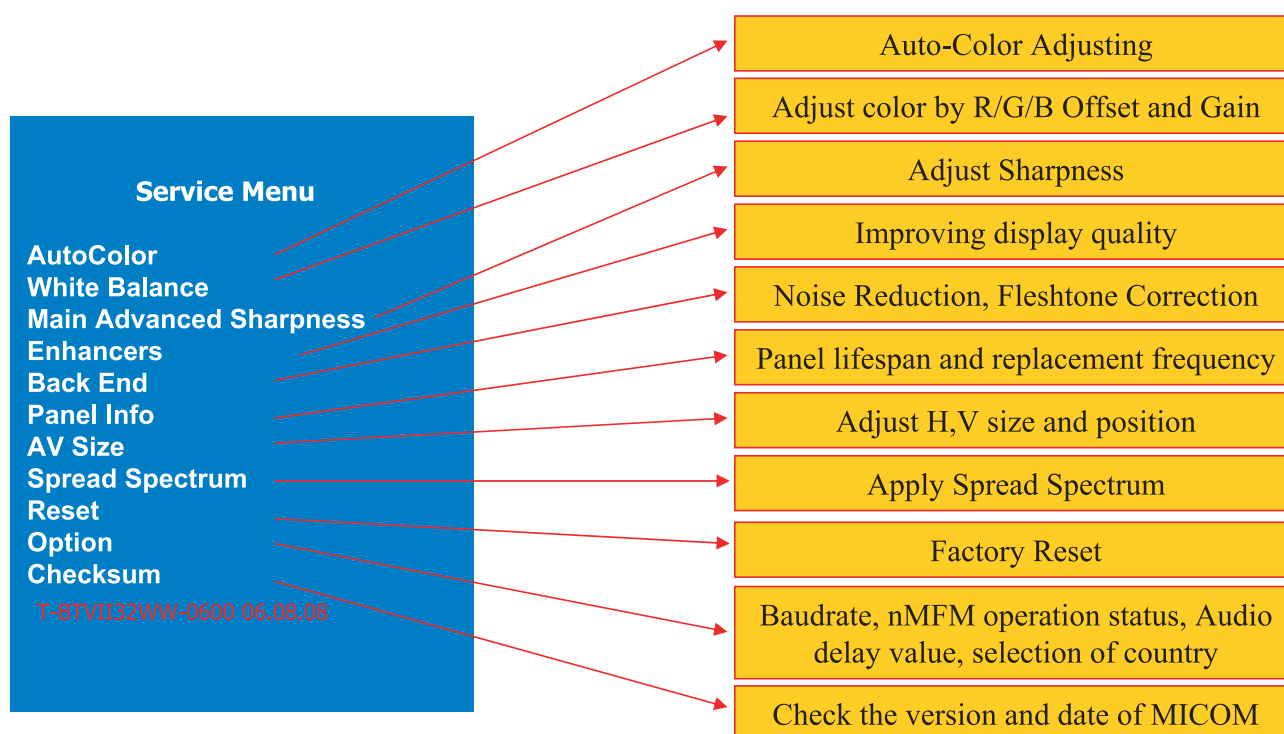


3-1-1 Entering the Factory menu on the Main board(using REMOCON)

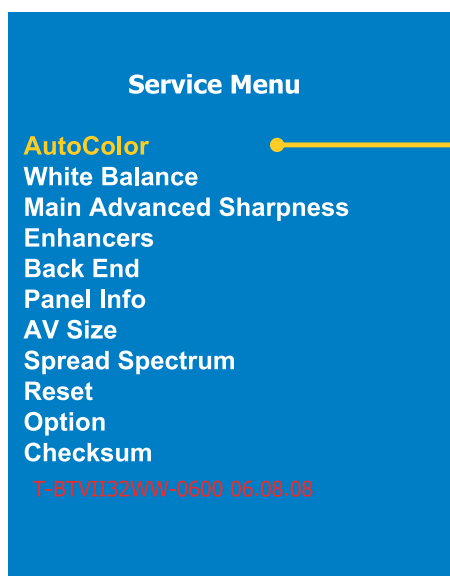
- Power Off + MUTE + 1+ 8 + 2 + Power On
- When use the Factory remote control : INFO + Factory

3. Alignment and Adjustments

3-3 Service Mode Menu



- AutoColor Part



PC analog Only (1024x768@60 16gray pattern)

The Color Control properly operates only in the certain pattern with certain mode and the color warps in other patterns and modes. Also the proper color control is not supported in the mode other than XGA 60Hz.

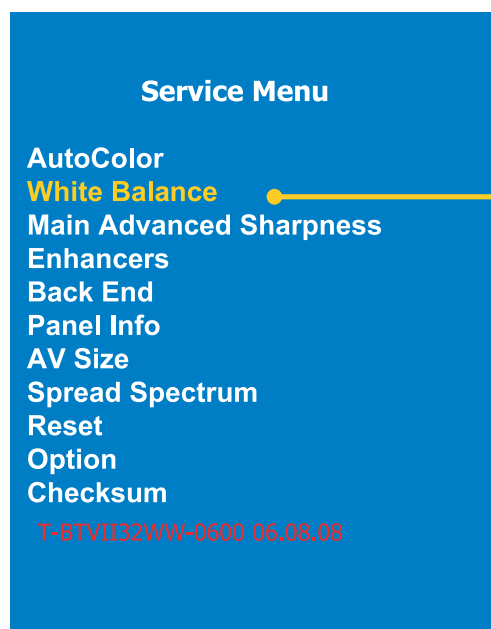


Component (720p color bar pattern)

Color control operates normally only in certain modes of certain patterns, but in other cases, the operation may distort color.

Extreme caution needed.!!

- White Balance Part



Used for color control.

But excessive setting may saturate the color.

Extreme caution needed.!!

White Balance	Off
Sub Bright	0
Sub Contrast	-35
RED Offset	0
GREEN Offset	0
BLUE Offset	-1
RED Gain	-18
GREEN Gain	0
BLUE Gain	41



On: Display factory adjusting value
Off: Display default setting value

Register value in the Scaler
RED / BLUE / GREEN
Adjust the Gain and Offset

3. Alignment and Adjustments

- Sharpness Part (1)

Adjusting the sharpness of displayed image.

Service Menu	
AutoColor	
White Balance	
Main Advanced Sharpness	
Enhancers	
Back End	
Panel Info	
AV Size	
Spread Spectrum	
Reset	
Option	
Checksum	
T-BTV032VW-0600 06.08.09	

Main V Peaking Y	32
Main V Peaking UV	16
Main V Peaking Coring	16
Main V Peaking Region 1 Threshold	48
Main V Peaking Region 1 Gain	4
Main V Peaking Region 2 Threshold	170
Main V Peaking Region 2 Gain	4
Main H Peaking Y	32
Main H Peaking UV	16
Main H Peaking Coring	8
Main H Peaking Region 1 Threshold	48
Main H Peaking Region 1 Gain	4
Main H Peaking Region 2 Threshold	170
Main H Peaking Region 2 Gain	4
Sharpness Noise Coring	

Adaptive
Low
High
Medium
Off

- Sharpness Part (2)

Main V Peaking Y
Main V Peaking UV
Main V Peaking Coring
Main V Peaking Region 1 Threshold
Main V Peaking Region 1 Gain
Main V Peaking Region 2 Threshold
Main V Peaking Region 2 Gain
Main H Peaking Y
Main H Peaking UV
Main H Peaking Coring
Main H Peaking Region 1 Threshold
Main H Peaking Region 1 Gain
Main H Peaking Region 2 Threshold
Main H Peaking Region 2 Gain
Sharpness Noise Coring

Scaling Filter Sharpness Control - Peaking Y / Peaking UV
 This adjusts the sharpness of luminance(Y) and color(UV).
 The bigger the number is in the range of 1~127, the clearer the picture is. The bigger the number is in the range of 128~255, the more natural video is. Too high sharpness may cause the vivid noise.

Noise Coring Control - Peaking Coring
 Display only the sharp large-edge without assuming the small-edge of the video as a noise and amplifying it.

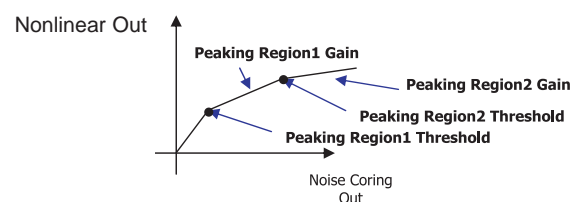
Noise Coring Out

Assign the threshold value to improve the sharpness.

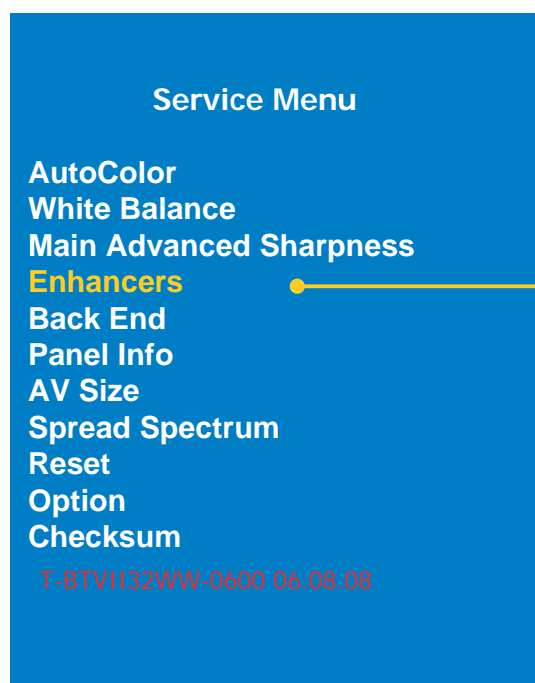
H : Horizontal
V : Vertical

NonLinear Sharpness Control - Peaking Resion1/2 Threshold, Gain

Divide the frequency area and apply the different Gain for each area rather than evenly apply the sharpness level over the whole image.



- Enhancers Part



Adjust to display the clear and sharp image.

This function is used to adjust the appropriate value for each target region. Change only when it is needed.

HLE Threshold	10
HLE Gain	180
HDP Threshold	21
HDP Gain	71
HCE Threshold	15
HCE Gain	25
VDP Threshold	27
VDP Gain	3

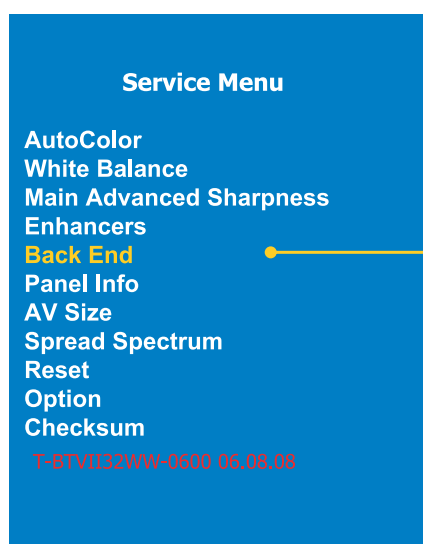
HLE : Horizontal Large Edge Enhancer

HDP : Horizontal Detail Processor

HCE : Horizontal Chroma Enhancer

VDP : Vertical Detail Processor

- Back End Part



The MPEG NR menu is used to reduce the Mosquito noise and Gaussian noise. The Fleshtone menu is used to display the natural skin color.

Gamma	Off
LCD Overdrive Noise Coring	Adaptive
MPEG NR Mode	MOSQ_GAUSS
MPEG NR Threshold0	28
MPEG NR Threshold1	15
MPEG NR Threshold2	40
Non ACM Fleshtone Correction	Off
Non ACM Fleshtone Correction Level	0
Non ACM Fleshtone Balance	0



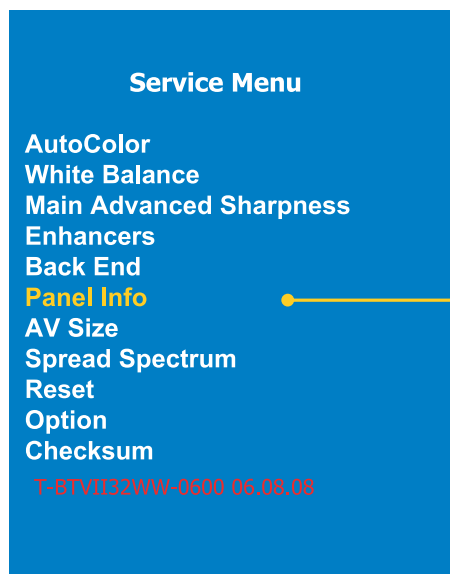
Mosquito Noise



Reduced Mosquito Noise

3. Alignment and Adjustments

- Panel Info Part

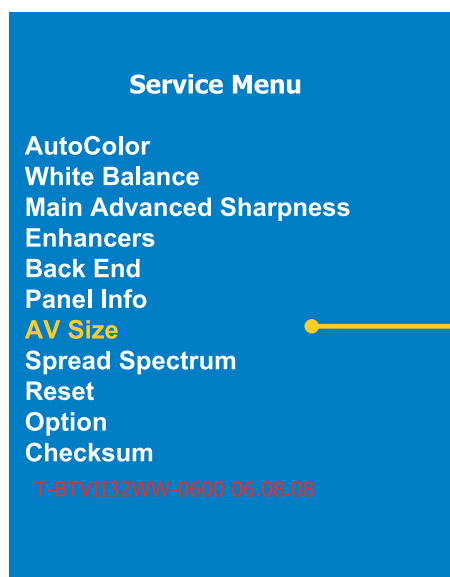


Display the panel use time and the number of change.

	Time	Ch. No.
Total Hr :	25510922	96

Time Reset : Press the menu button on the front panel for 5 seconds.

- AV Size Part



AV size, position Adjustment
H,V size / H,V Position

H Size	0
V Size	0
H Position	0
V Position	0

- Spread Spectrum/Reset Part

Service Menu	
AutoColor	
White Balance	
Main Advanced Sharpness	
Enhancers	
Back End	
Panel Info	
AV Size	
Spread Spectrum	
Reset	
Option	
Checksum	
T-8TV132WW-0600 05.08.08	

Spread Spectrum Adjustment
The application status of Spread spectrum
Amplitude and Period Setting

Spread sp	1
0 : Disable 1: Enable	
Amplitude	2
Period	10

Reset : Factory Reset

Reset the setting on the Service Menu to the default setting.

Need to turn the Power On/Off after reset

- Option/Checksum Part

Service Menu	
AutoColor	
White Balance	
Main Advanced Sharpness	
Enhancers	
Back End	
Panel Info	
AV Size	
Spread Spectrum	
Reset	
Option	
Checksum	
T-8TV132WW-0600 05.08.08	

Option Adjustment
Baudrate Speed Setting (The default value is 9600.
Change to 115200 when the code update on the main board is required.)
Function Key Setting/Unsetting
Option Setting in the Network part
Audio delay Setting (Set for the video and audio synchronization.)
The message display in the improper resolution mode Setting/Unsetting
DVI cable impedance matching setting
DVI clock reset Setting/Unsetting
PC cable detect Setting/Unsetting
DVI hot plug detect Setting/Unsetting

Baudrate	9600
Function key	Enabled
Check nMFM	On
Audio delay	
Not Optimum Mode	On
DVI Impedance	34
DVI Clock	Off
PC Cable Detect	Off
Hot Plug Detect	Off

	Time	0:Off 1:On
Audio Delay	65	1

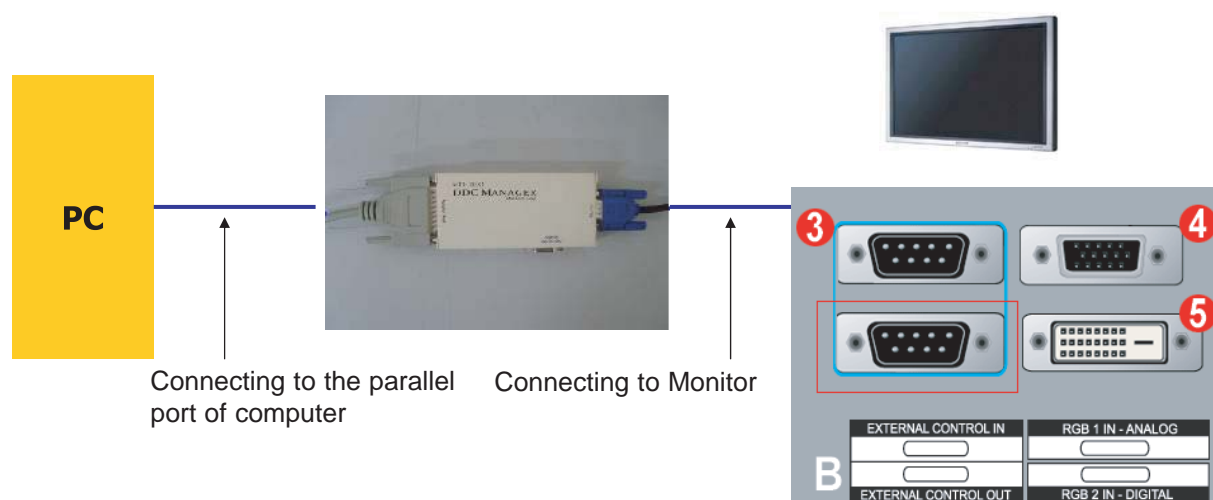
Checksum

The 4 digit serial number regarding the micom code is displayed if you select this.

3. Alignment and Adjustments

3-4 DDC Input Process

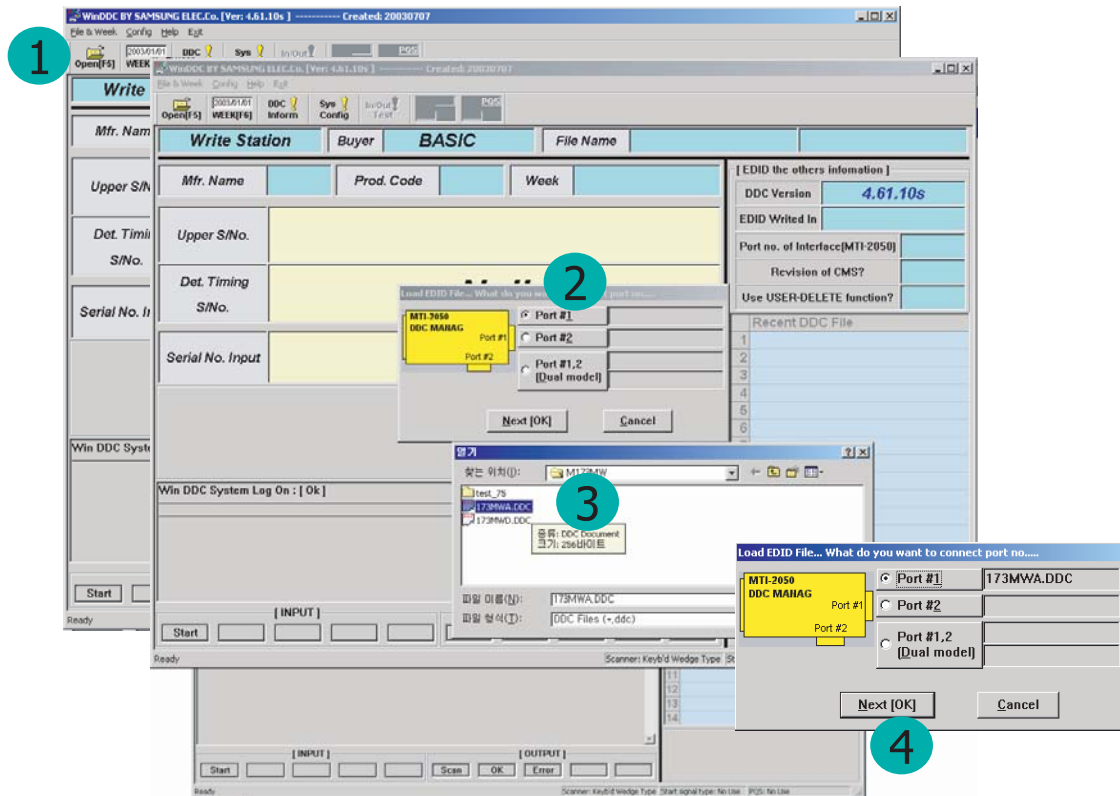
Connecting D-sub cable between the parallel port(printer port) of computer and Monitor.



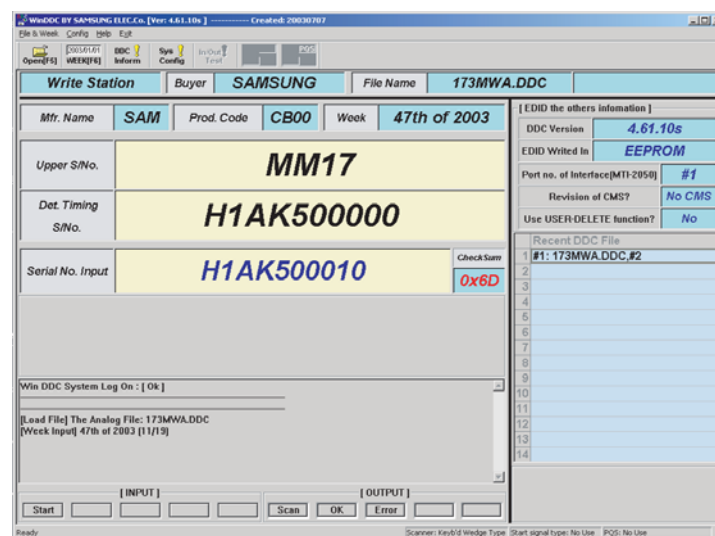
- DDC Input Process

(DDC file name : SM320PXA1.DDC / SM320PXD1.DDC)

The DDC input is available after entering the Service Mode.: Cancel the DDC Protection.



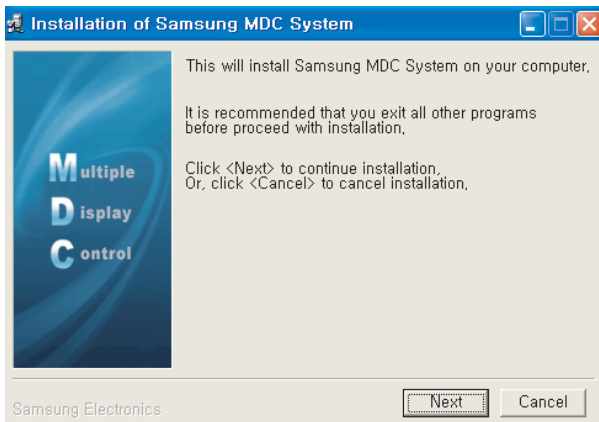
1. Open the file.
2. Select Port 1 (D-SUB) / Select Port 2(DVI)
3. Select the DDC file.
4. Click the Next(OK) button.



- 5: Input the monitor serial number and press Enter.
Input Analog and repeat 2~5 times when input Digital.

3. Alignment and Adjustments

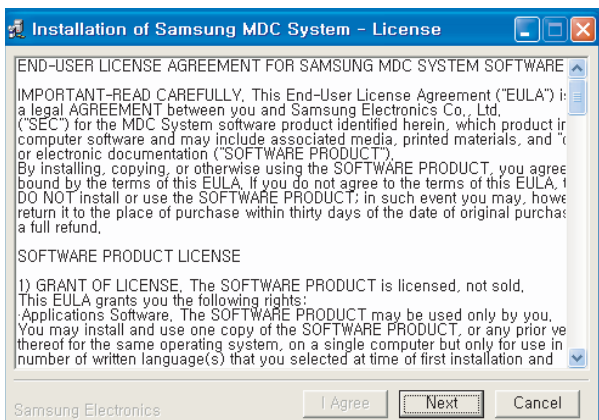
3-5 MDC(Multi Display Control) Program



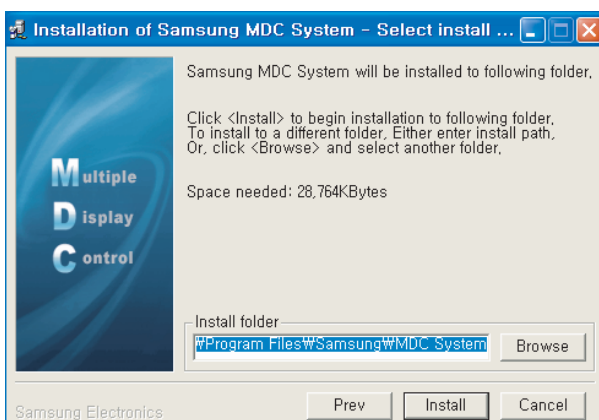
1. Run the SETUP. EXE file.



2. Select I Agree.

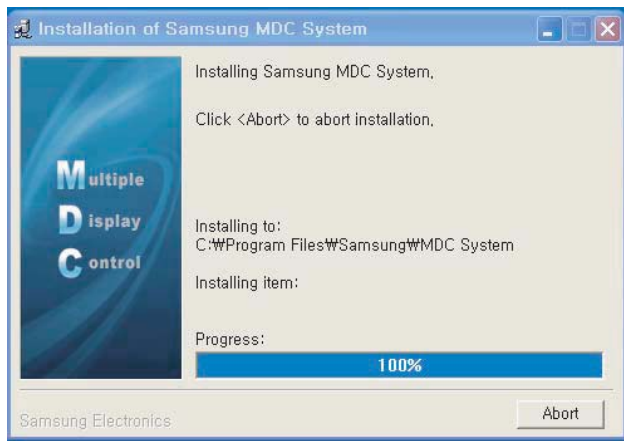


3. Select NEXT.



4. Select Install.

3. Alignment and Adjustments



5. "Yes" Click.



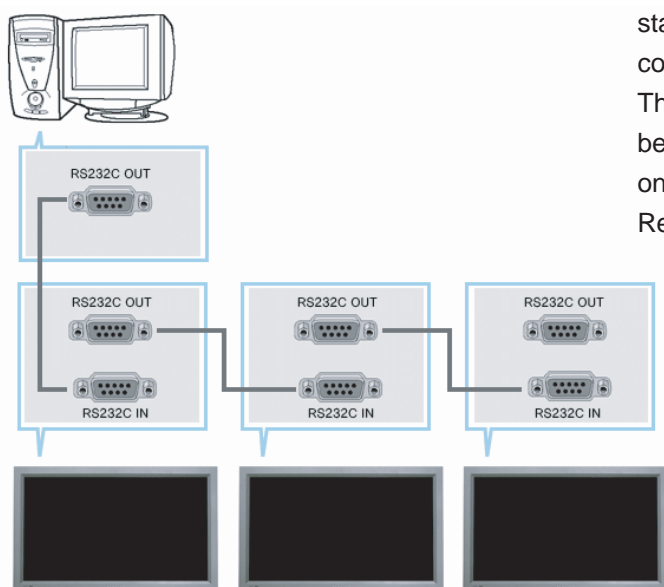
6. "OK" Click.

3. Alignment and Adjustments

3-6 MDC(Multi Display Control) Program_How to use

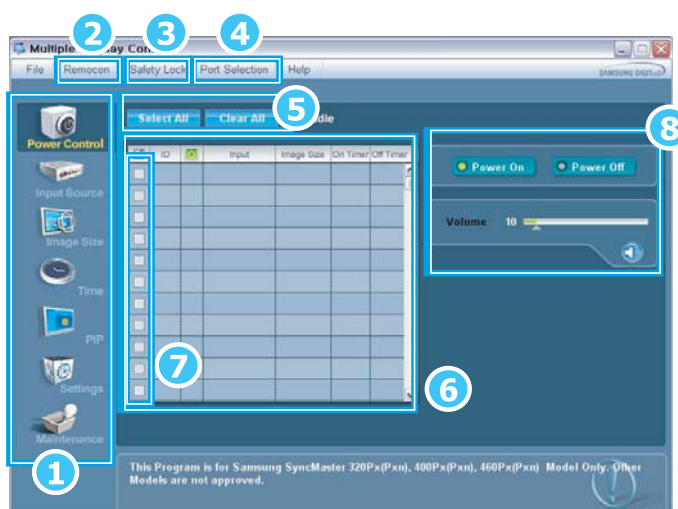
- Connect the serial port of the PC and Beethoven Board with the RS232C cable.
- Option in the Factory Menu : Check if BaudRate is set to 9600

A Multiple Display Control (MDC) is an application allowing various displays to be easily and simultaneously operated on a PC. RS-232C, a standard of serial communication, is used for the communication between a PC and a display. Therefore, a serial cable should be connected between the serial port on a PC and the serial port on a display. Refer to the diagram.



- Start- Main Window

Click Start > Program > Multiple Display Control to start the program.
Select a set to see the volume of the selected set within the slider.

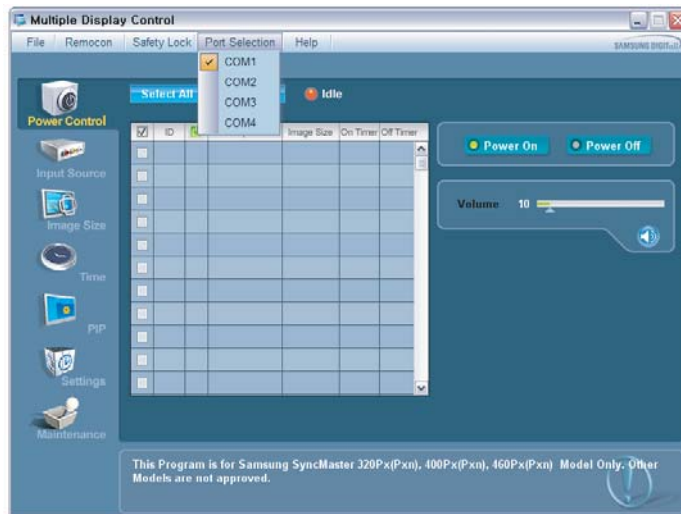


1. Click the main icons to switch into each screen.
2. Allows you to enable or disable the remote control signal receiving function of the display unit.
3. Use to lock monitor functions.
4. Use to change the port. The default port is COM1.
5. Use Select All and Clear All buttons to select or clear all displays.
6. Use Grid to view brief information on selected display.

The remote control Enable/Disable function operates whether or not the power is On/Off, and this applies to all displays connected to the MDC. However, all displays return to the default setting with the remote control receiving function enabled regardless of the status at the time the MDC is shut down

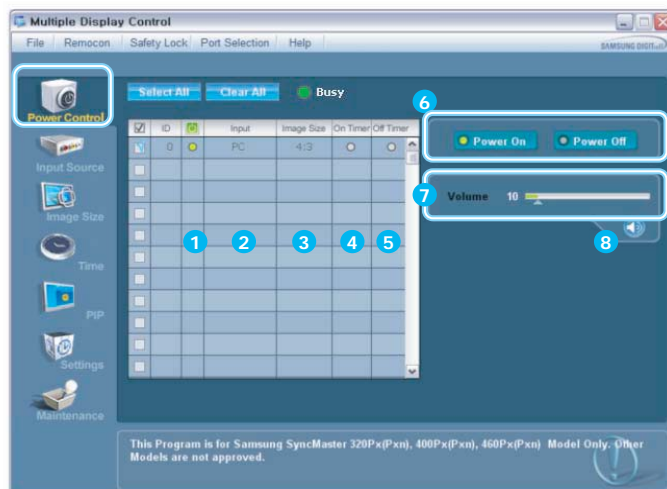
- | | |
|------------------|------------------|
| ① Main Icons | ② Remocon |
| ③ Safety Lock | ④ Port Selection |
| ⑤ Safety Lock | ⑥ Info Grid |
| ⑦ Port Selection | ⑧ Control Tools |

- Start-Port Selection



1. Multiple Display Control is originally set to COM1.
2. If the port other than COM 1 is used, any port between COM1 to COM4 is selectable.
3. The port connected to the monitor and serial cable needs to be assigned with the correct name for the communications.
4. Once the port is selected, it is stored and used for the next program.

- Power Control



1. Click Power Control of the main icons to display the Power Control window.
- Info Grid shows some basic information necessary for Power Control.

- 1) Power Status
- 2) Input Source
- 3) Image Size
- 4) On Timer Status
- 5) Off Timer Status

2. Use the Select All button or Check Box to choose a display to control.

Power Control allows you to control functions regarding the power of the selected display on the menu.

- 6) Power On/Off

Turns the power of the selected display on or off.

- 7) Volume

Adjust the volume of the selected display.

The appropriate volume for the selected set is displayed as you select a set.

(When you cancel the selection or choose Select All, the volume returns to the default value 10.)

- 8) Mute On/Off

Turns on or off the Mute function of the selected monitor. The Power Control feature is available for all connected monitors.

- **The Volume Control and Mute features are available only for the displays whose power status is ON.**

3. Alignment and Adjustments

-Input Source Control

1. Click Input Source of the main icons to display the Input Source control window.
Click Select All or use Check Box to select a display to control.



- Info Grid shows some basic information necessary to Input Source Control.

- 1) PC
Changes the Input Source of the selected display to PC.
- 2) BNC
Changes the Input Source of the selected display to BNC.
- 3) DVI
Changes the Input Source of the selected display to DVI.
- 4) TV
Changes the Input Source of the selected display to TV.
- 5) AV
Changes the Input Source of the selected display to AV.
- 6) S-Video
Changes the Input Source of the selected display to S-Video.
- 7) Component
Changes the Input Source of the selected display to Component.
- 8) MagicNet
The MagicNet input can be changed only in the MagicNet mode.

- The Input Source Control feature is available only for the display whose power status is ON.

-Image Size Control - PC, BNC, DVI

1. Click Image Size of the main icons to display the Image Size control window.



- Info Grid shows some basic information necessary to Image Size Control.

- 1) Power
Shows the power status of the current display.
- 2) Image Size
Shows the current Image Size of the display in use.
- 3) Input Source
Shows the current Input Source of the display in use.
Info Grid displays only the displays whose Input Source is PC, BNC, or DVI.
- 4) When you click Image Size, the PC, BNC, and DVI tabs first appear.
This feature allows you to control Image Size for PC, BNC, or DV.

- Image Size Control is available only for the displays for whose power status is ON.

3. Alignment and Adjustments

-Image Size Control - Video Source

1. Click Image Size of the main icons to display the Image Size window.



- Info Grid shows some basic information necessary to Image Size Control.

- 1) Click the Video Source tab to adjust the Image Size of AV, S-Video, TV, Component, or DVI(HDCP). Click Select All or use Check Box to select a display to control.
- 2) Info Grid displays only the display having AV, S-Video, TV, Component, or DVI(HDCP) as input source
- 3) Adjust the Image Size of the display.
If the input signal for the component or DVI(HDCP) is 720p or 1080, Zoom1 and Zoom are not available.

- **The Image Size Control feature is available only for the displays whose power status is ON.**

-Time Control

1. Click Time of the main icons to display the Time Control window.



- Info Grid shows some basic information necessary to Time Control.

- 1) Current Time
Set the current time for the selected display (PC Time).
Set the PC time before you change the current time.
- 2) On Time Setup
Set the hour, minute, AM/PM of On Time, Status, Source, and Volume of the selected display.
- 3) Off Time Setup
Set the hour, minute,, and AM/PM, and Status for Off Timer of the selected display.
- 4) Shows the On Timer settings.
- 5) Shows the Off Timer settings.

- **Time Control is available only for the displays for whose the power status is ON.**

3. Alignment and Adjustments

-PIP Control - PIP Size

1. Click PIP of the main icons to display the PIP control window.



- Info Grid shows some basic information necessary to PIP Size Control.

- 1) PIP Size
Shows the current PIP Size of the display in use.
- 2) OFF
Turns off the PIP of the selected display.
- 3) Large
Turns on the PIP of the selected display and changes the size to Large.
- 4) Small
Turns on the PIP of the selected display and changes the size to Small.
- 5) Double1
Turns on the PIP of the selected display and changes the size to Double 1.
- 6) Double2
Turns on the PIP of the selected display and changes the size to Double 2.
- 7) Double3
Turns on the PIP of the selected display and changes the size to Double 3.

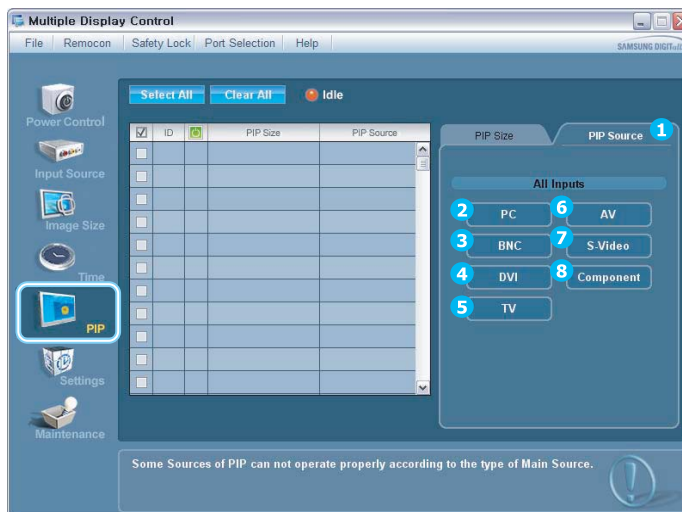
- **PIP Control is available only for the displays whose power status is ON.**

- **The set with the input source Component is not displayed on Info Grid.**

3. Alignment and Adjustments

-PIP Control - PIP Source

1. Click PIP of the main icons to display the PIP control window.



Some of the PIP Sources may not be available for selection depending on the input source type of the Main Screen.

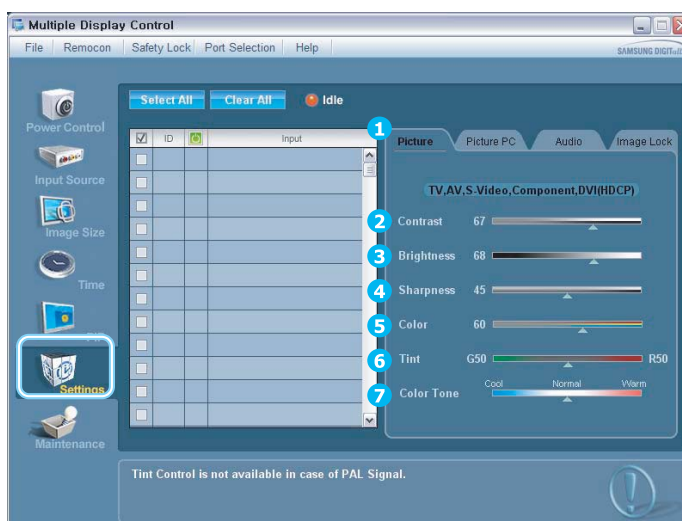
The PIP control feature is available only for the displays whose power status is ON and the PIP function is set to ON.

- Info grid shows some basic information necessary to PIP Source Control.

- 1) PIP Source
Click the PIP Source tab to display the PIP Source list. PIP Source can be controlled only when the power of the monitor is turned on.
- 2) PC
Changes the PIP source of the selected display to PC.
- 3) BNC
Changes the PIP source of the selected display to BNC.
- 4) DVI
Changes the PIP source of the selected display to DVI.
- 5) TV
Changes the PIP source of the selected display to TV.
- 6) AV
Changes the PIP source of the selected display to AV.
- 7) S-Video
Changes the PIP source of the selected display to S-Video.
- 8) Component
Changes the PIP source of the selected display to Component.

- Setting Control - Picture

1. Click Settings of the main icons to display the Settings Control screen.



This feature is available only for the displays whose power status is ON and if no selection is made, the factory default is displayed.

- Info Grid shows some basic information necessary to Setting Control. When each function is selected, the set value of the selected function is displayed in the slide. As you select Select All, the value is returned to the default setting (50).

Changing a value in this screen will automatically change the mode to "CUSTOM."

- 1) Picture
Available only for TV, AV, S-Video, Component, and DVI(HDCP).
- 2) Contrast
Adjusts Contrast of the selected display.
- 3) Brightness
Adjusts Brightness of the selected display.
- 4) Sharpness
Adjusts Sharpness of the selected display.
- 5) Color
Adjusts Color of the selected display.
- 6) Tint
Adjusts Tint of the selected display.
- 7) Color Tone
Adjusts Color Tone of the selected display.

3. Alignment and Adjustments

-Setting Control - Picture PC

1. Click Setting of the main icons and select the Picture PC tab to display the Setting Control window.



This feature is available only for the displays whose power status is ON and if no selection is made, the factory default is displayed.

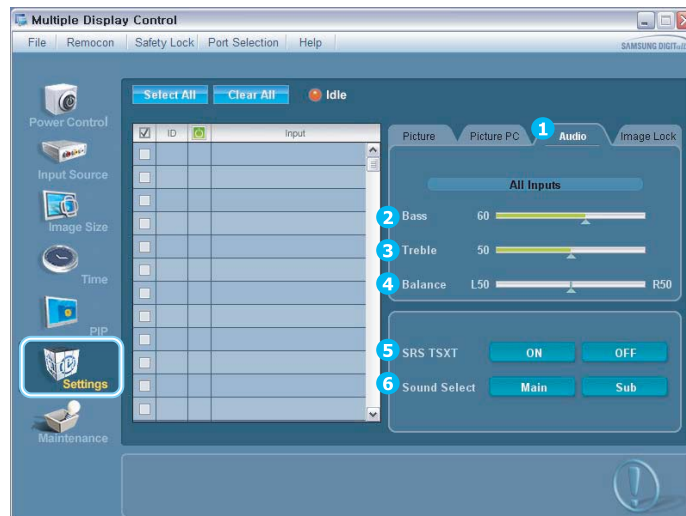
- Info Grid shows some basic information necessary to Setting Control. When each function is selected, the set value of the selected function is displayed in the slide. As you select Select All, the value is returned to the default setting (50).

Changing a value in this screen will automatically change the mode to "CUSTOM."

- 1) Picture PC
Available only for PC, BNC, and DVI.
- 2) Contrast
Adjusts Contrast of the selected display.
- 3) Brightness
Adjusts Brightness of the selected display.
- 4) Red
Adjusts Red Color of the selected display.
- 5) Green
Adjusts Green Color of the selected display.
- 6) Blue
Adjusts Blue Color of the selected display.

-Setting Control - Audio

1. Click Settings of the main icons and select the Audio tab to display the Setting Control window.



This feature is available only for the displays whose power status is IN and if no selection is made, the factory default is displayed.
The MagicNet Input operates only in MagicNet models.

- Info Grid shows some basic information necessary to Setting Control. When each function is selected, the set value of the selected function is displayed in the slide. As you select Select All, the value is returned to the default setting (50).

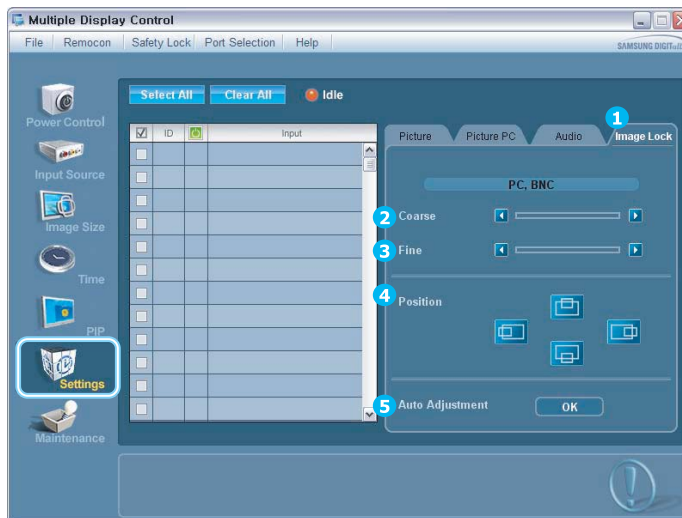
Changing a value in this screen will automatically change the mode to "CUSTOM."

- 1) Audio
Controls audio setting for all input sources.
- 2) Bass
Adjusts Bass of the selected display.
- 3) Treble
Adjusts Treble of the selected display.
- 4) Balance
Adjusts Balance of the selected display.
- 5) SRS TSXT
Turns the SRS Trusurround XT function of the selected display On/Off.
- 6) Sound Select
Select either Main or Sub when the PIP of the selected display is turned On.

3. Alignment and Adjustments

-Setting Control - Image Lock

1. Click Settings of the main icons and select the Image tab to display the Setting Control window.



- Info Grid shows some basic information necessary to Image Lock.

- 1) Image Lock

Available only the controls for PC and BNC.

- 2) Coarse

Adjusts Coarse of the selected display.

- 3) Fine

Adjusts Fine of the selected display.

- 4) Position

Adjusts Position of the selected display.

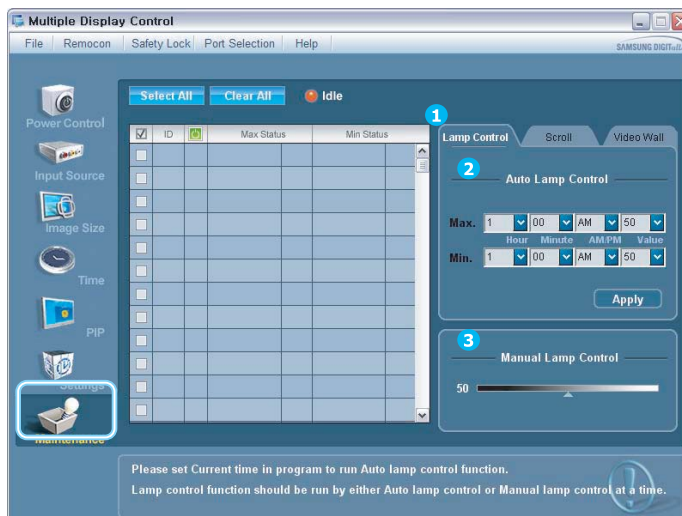
- 5) Auto Adjustment

Automatically adjusts the screen.

- This feature is available only for the displays whose power status is ON.

-Maintenance Control - Lamp Control

1. Click Maintenance of the main icons and select the Lamp Control tab to display the Maintenance Control window.



- Info Grid shows some basic information necessary to Maintenance Control.

- 1) Lamp control

Adjusts the brightness of the lamp.

- 2) Auto Lamp Control

Automatically adjusts the backlight of the selected display at a specified time. The Auto Lamp Control automatically turns off if you adjust using the Manual Lamp Control.

- 3) Manual Lamp Control

Allows you to adjust the backlight of the selected display regardless of the time.

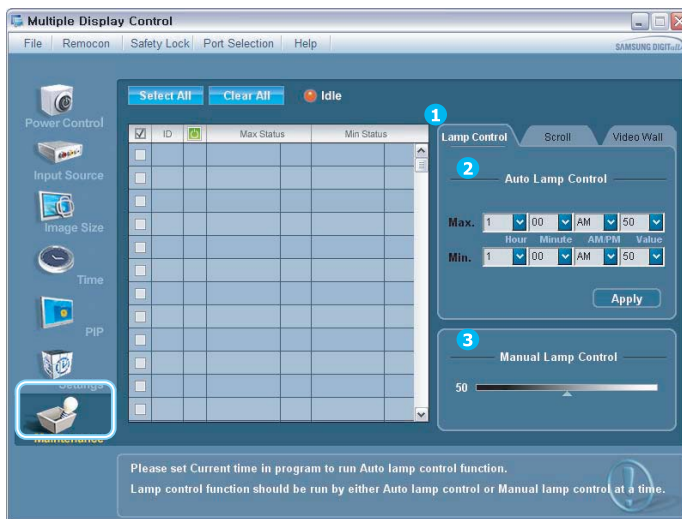
The Manual Lamp Control automatically turns off if you adjust using the Manual Lamp Control.

- The Maintenance Control feature is available only for the displays whose Power Status is ON.

3. Alignment and Adjustments

-Maintenance Control - Lamp Control

1. Click Maintenance of the main icons and select the Scroll tab to display the Maintenance Control.



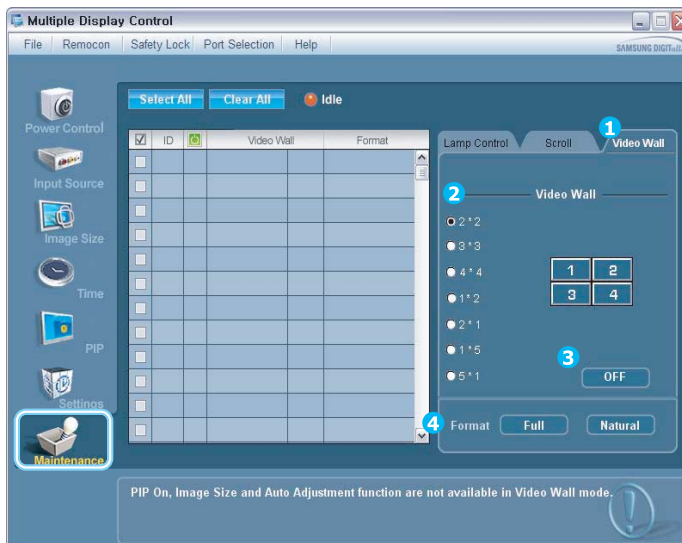
1) Screen Scroll

Eliminates the afterimages that can result when the still image is displayed for prolonged periods. Use Interval to set the repeat cycle by time unit and use Second to set the repeat cycle by second unit. Select one of 4 types- Scroll, Pixel, Bar, Eraser.

- The Maintenance Control feature is available only for the displays whose power status in ON.

-Maintenance Control - Video Wall

1. Click Maintenance of the main icons and select the Wall tab to display the Maintenance Control window.



1) Video Wall

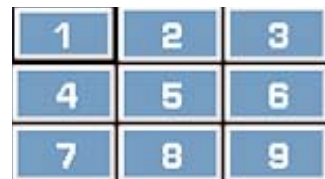
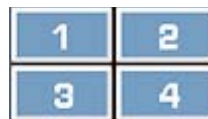
A Video Wall is a set of video screens that are connected together, so that each screen shows a part of the whole picture or so that the same picture is repeated on each screen.

2) Video Wall (Screen Divider)

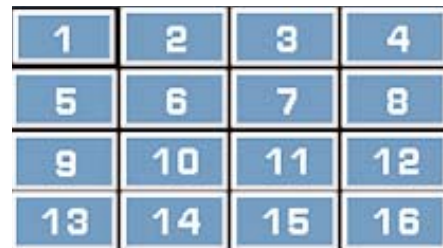
You can select a number of screens with a different layout when dividing.

2 * 2

3 * 3



4 * 4



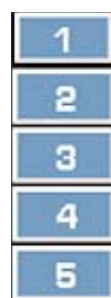
2 * 1



1 * 2



5 * 1



1 * 5



3) On / Off

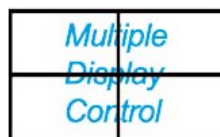
Turns On or Off the Video Wall function of the selected display.

4) Format

The format can be selected to see a divided screen.



Full



Natural

This feature is available only for the displays whose power status in IN and if no selection is made, the factory default is displayed.

The Malignant Input operates only in MagicNet models.

-Troubleshooting

1. The display you wish to control does not appear on the Power Control Info Grid
 - Check the connection of RS232C. (Check if it is properly connected to the Com1 port)
 - Check the displays to see if any of the other displays connected have the same ID. If more than one displays have the same ID, those displays are not properly detected by the program due to data conflict.
 - Check if the Display Set ID is a number between 1 and 10. (Adjust using the Display menu)

note : A Display Set ID must be a value between 1 and 10.

If the value is out of the range, the MDC system cannot control the display.

2. The display you wish to control does not appear on the other Control Info Grids
 - Check to see if the display power is ON. (You can check this in Power Control Info Grid)
 - Check if you can change the input source of the display.
3. The dialogue box appears repeatedly.
 - Check to see if the display you wish to control is selected.
4. Both On Timer and Off Timer have been set but different time is showing.
 - Apply current time to synchronize the display clocks.
5. The remote may not function properly when you turn off the remote Function, disconnect the RS-232C cable, or exit the program in an Irregular manner. Rerun the program and turn the remote function again to Restore normal functions.

note : This program may malfunction due to problems in communication circuits or interference from electronic appliances nearby.



Settings Value Display In Multiple Display Mode

When there are more than one displays connected, the settings values are displayed as follows.

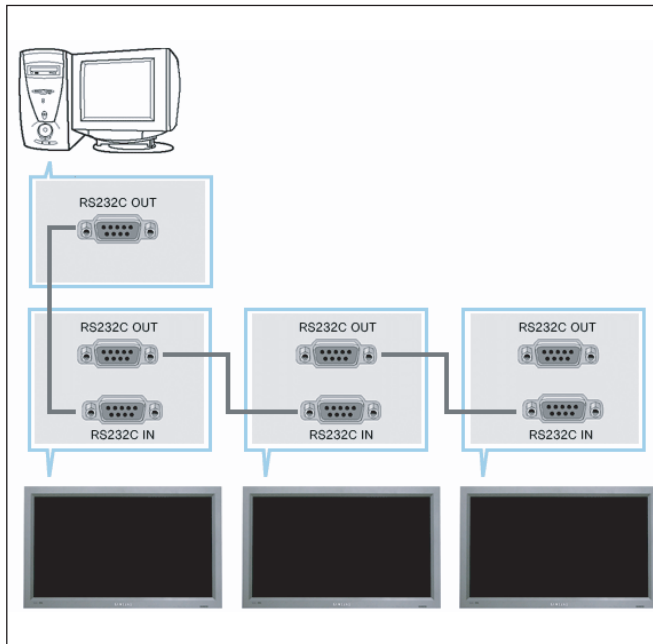
1. No selection: Displays the Factory Default Value.
2. Selected one display: Fetches and displays the settings value for the selected display.
3. Selected one display (ID1) and add another display (ID3): The program, which was displaying the settings value of ID 1, fetches and displays the value of ID3.
4. Selected all sets using Select All: Returns to the Factory Default Value.

3. Alignment and Adjustments

3-7 Updating the program - MAIN

- How to connect

1. Connect the serial port of the PC and the input serial port of Beethoven Board with the RS232C cable.
2. Option in the Factory Menu : Check if BaudRate is set to 115200.

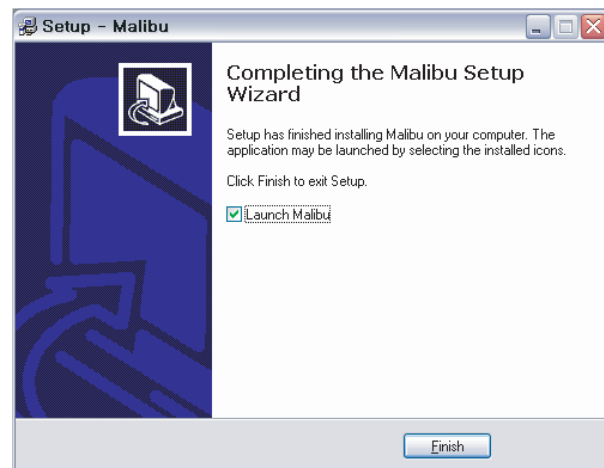


RS-232C, a standard of serial communication, is used for the communication between a PC and a display. Therefore, a serial cable should be connected between the serial port on a PC and the serial port on a display.

Refer to the diagram.

Run the .exe file and press the [OK] button, then press [Next] to complete the installation. (Attached)

Malibu Flash Downloader 1.7 File



The program is not affected by Windows OS system.

When the installation is complete using the Setup.exe file , the icon appears on your desktop.

Double click the icon to run the program.

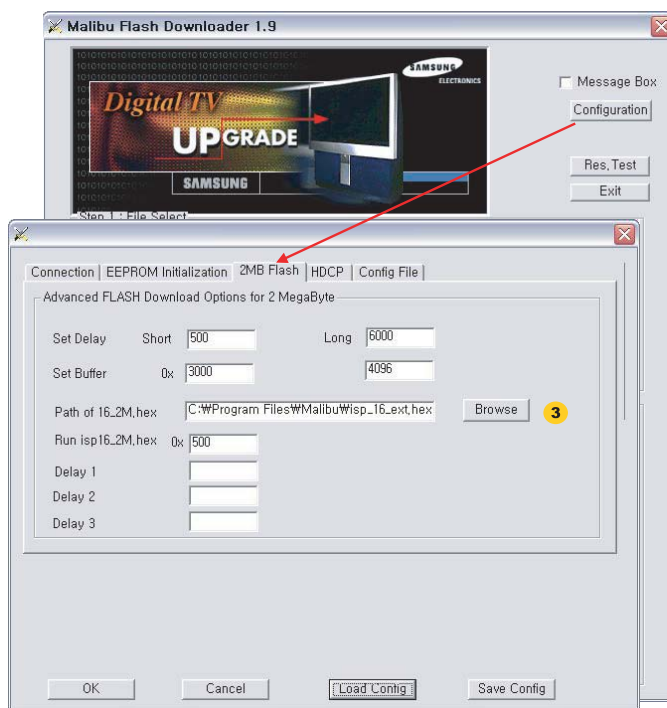
3. Alignment and Adjustments



1. Flash Download in the File Select menu

Set as the figure.

Chip Model : Set 2MB_CORTEZ first.



2. After the installation

Connection

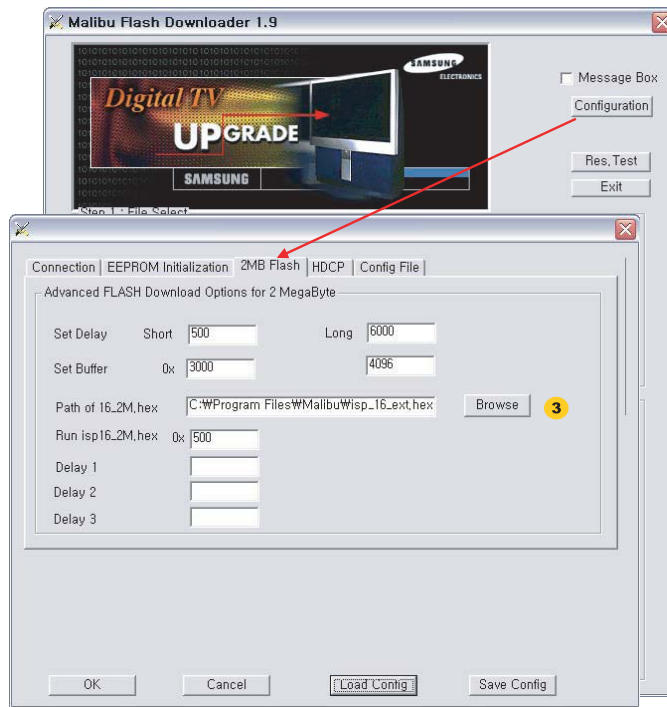
>Set as the figure

SERIAL1

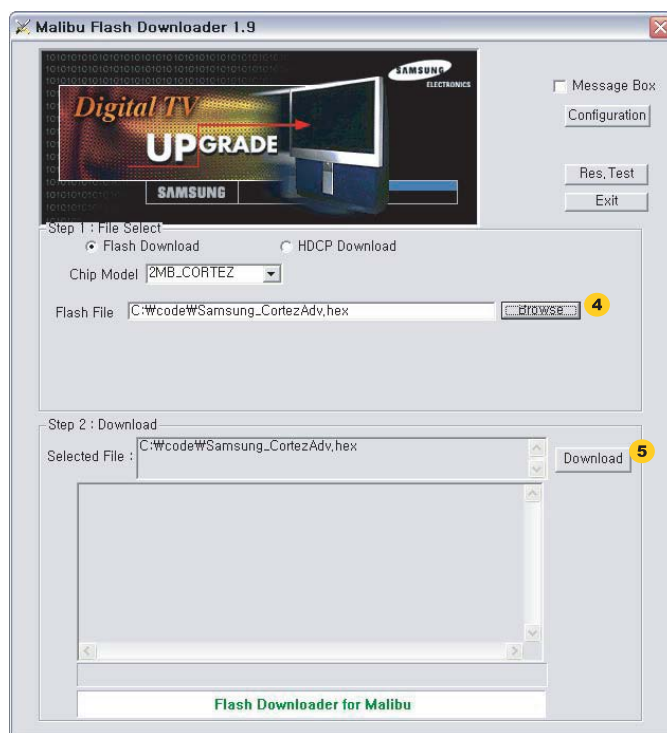
COM1

115200

3. Alignment and Adjustments



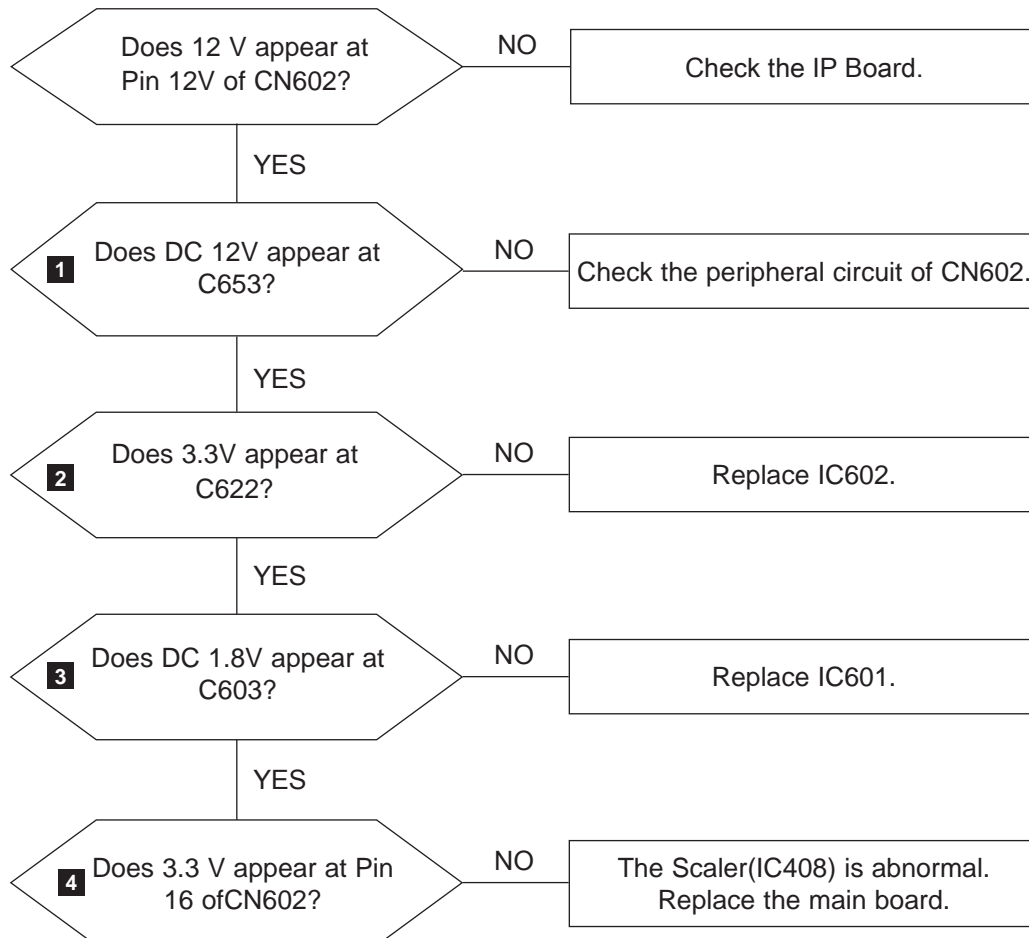
3. 2MB Flash
Isp_16_ext. Hex
Click Load Config for the auto setting.



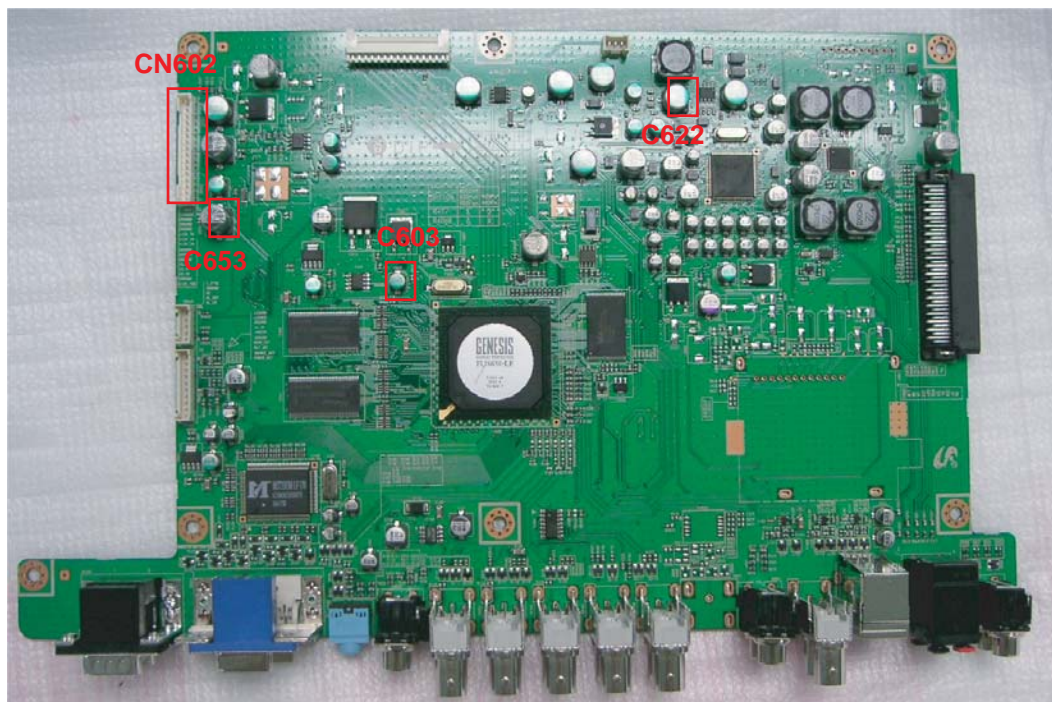
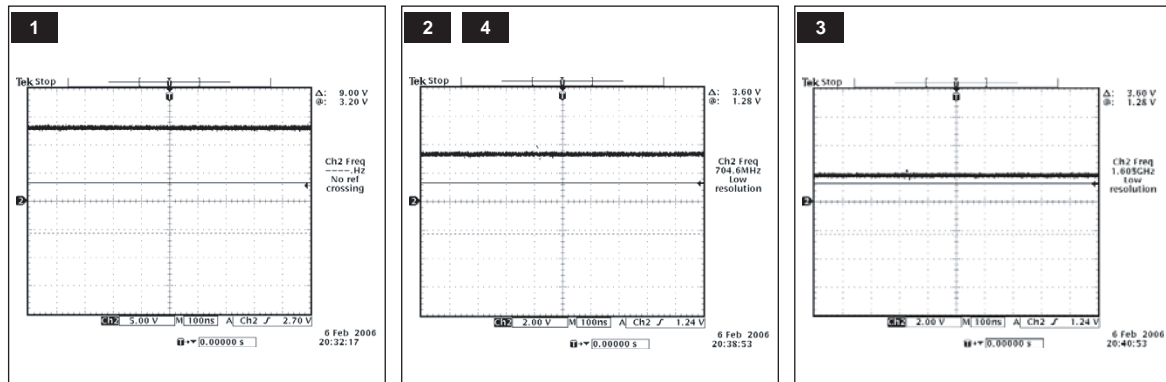
4. Select the file you want to download on Browse.
5. Press 5 to download.
Turn the power of the board off/on when the download success message appears.
- Check the Checksum and date to see if the right code is applied in the Factory mode.

4 Troubleshooting

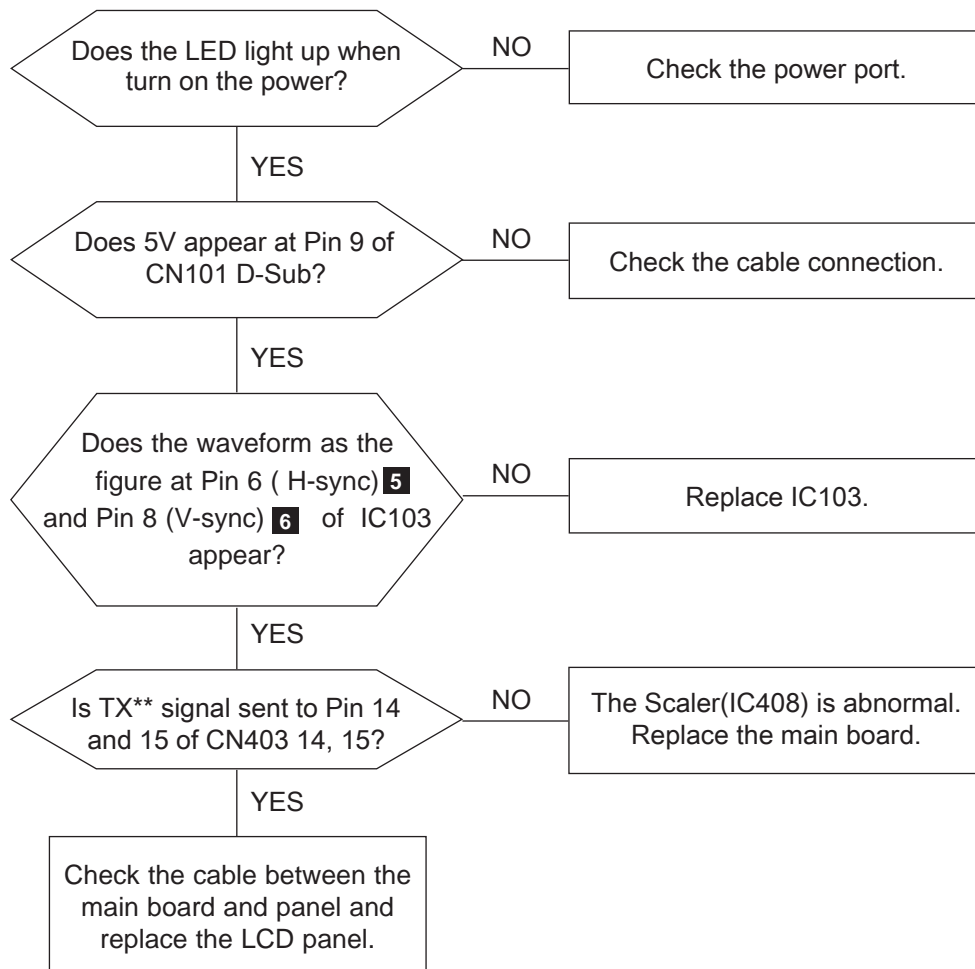
4-1 No Power



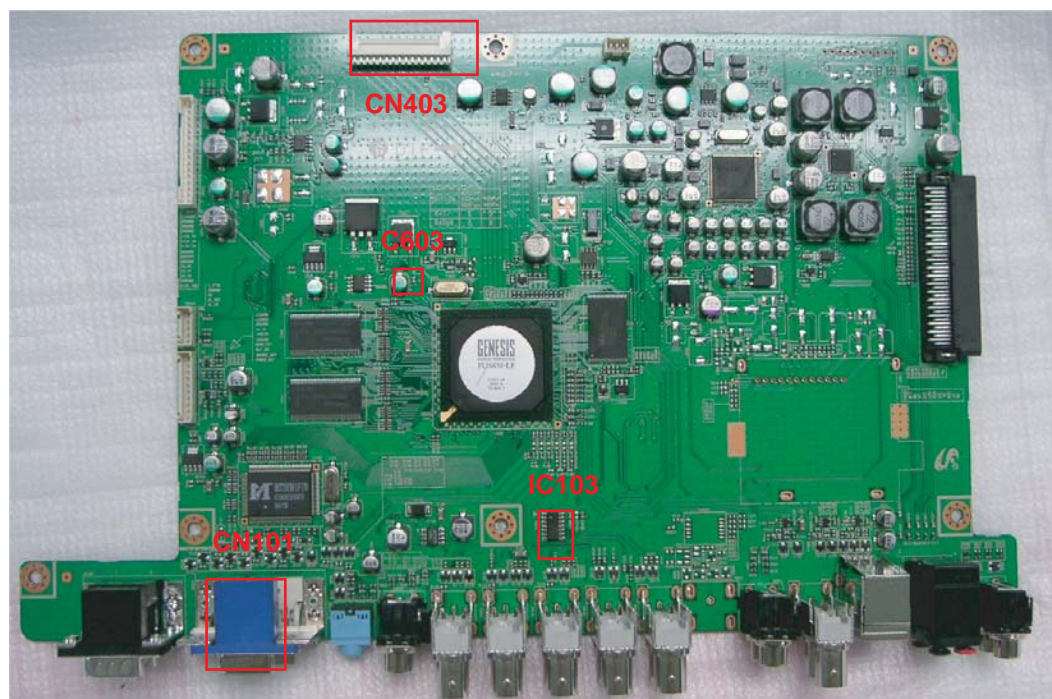
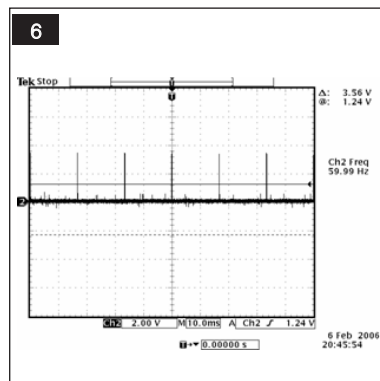
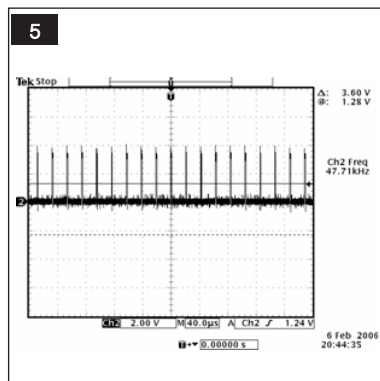
WAVEFORMS



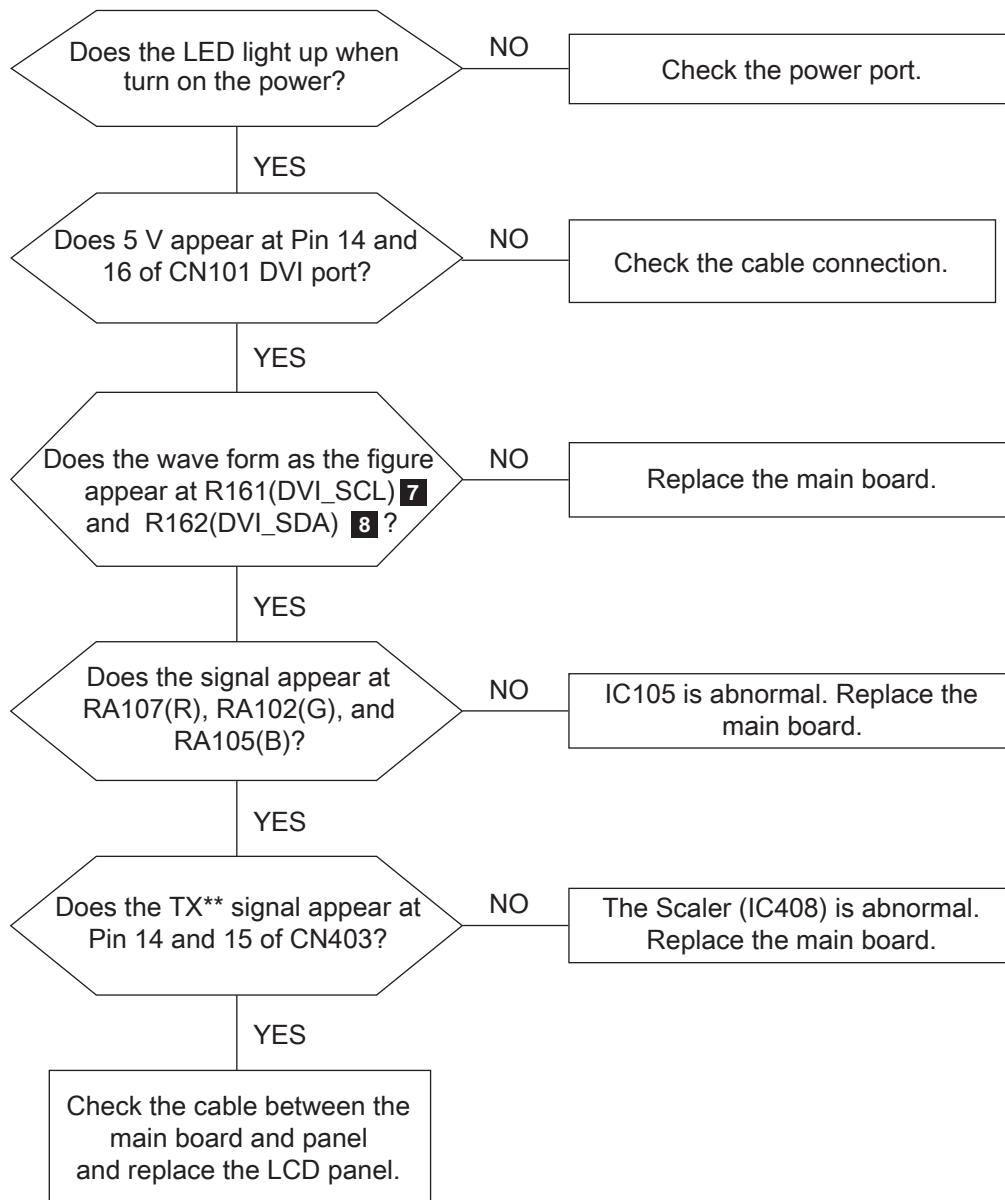
4-2 No PC(D-SUB) Video



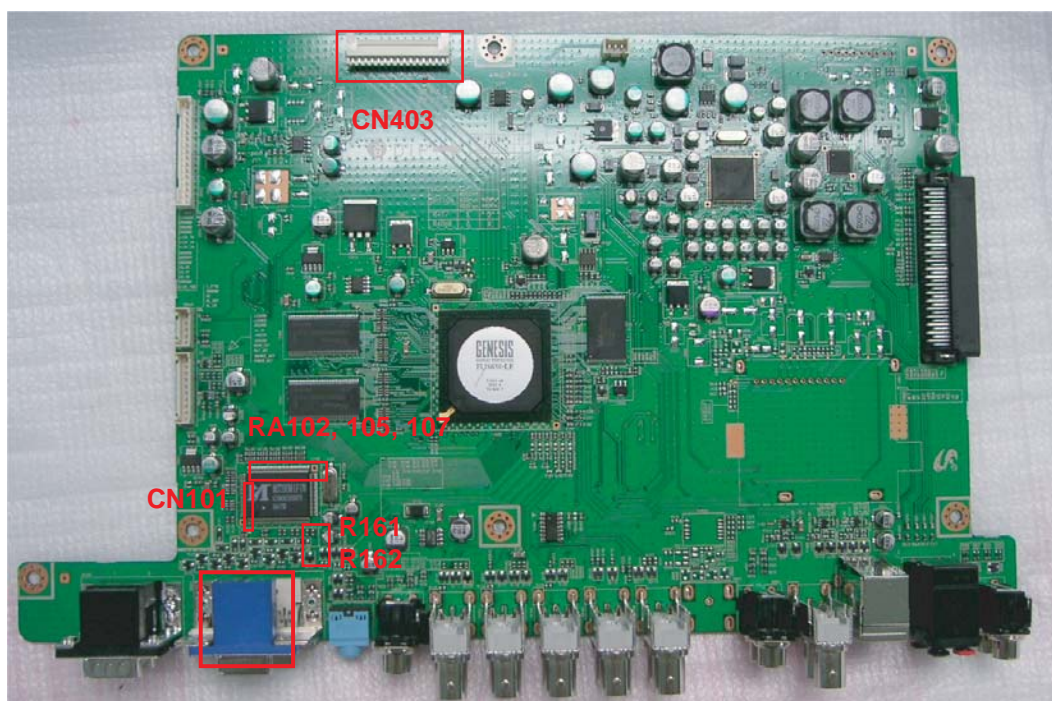
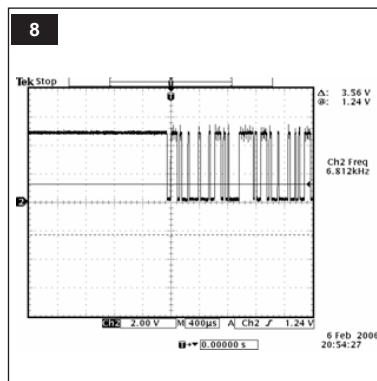
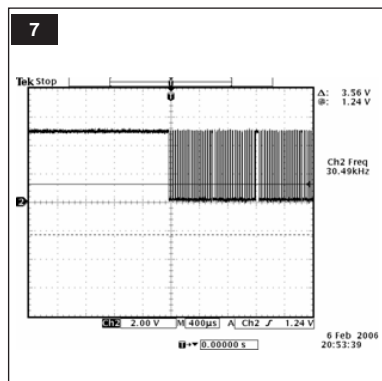
WAVEFORMS



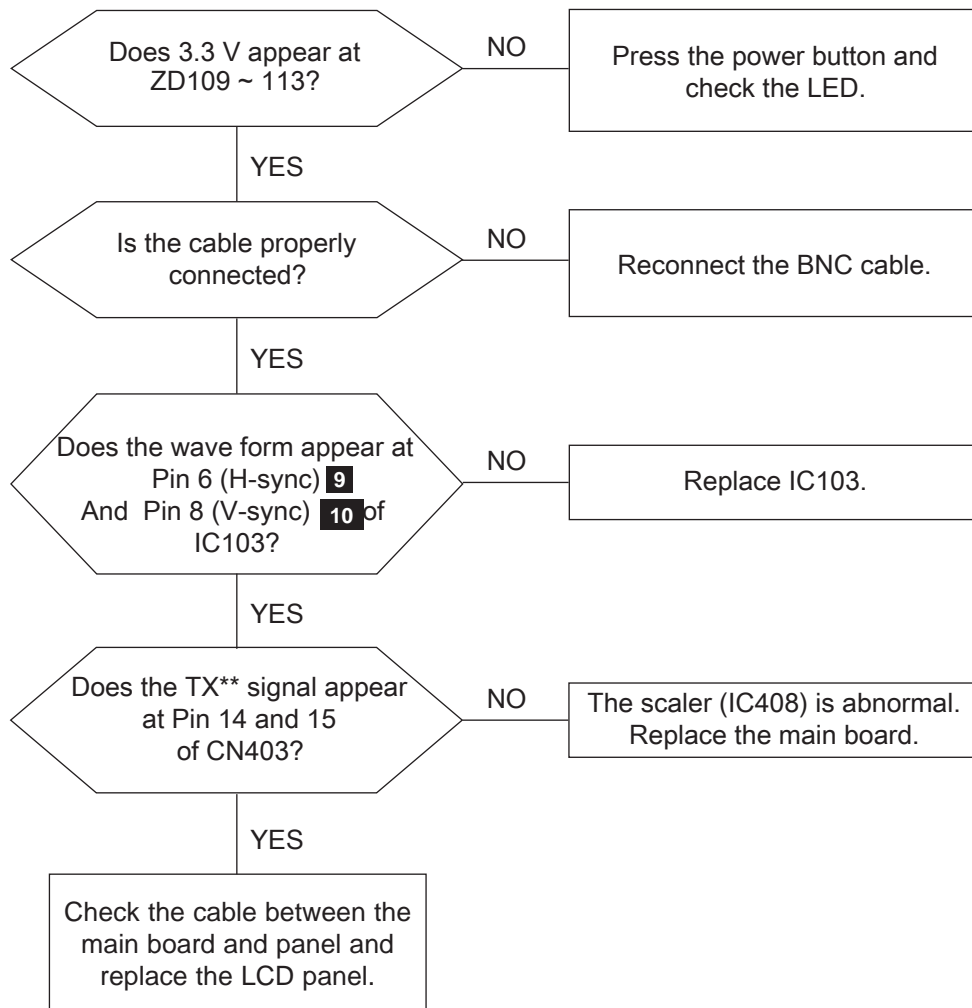
4-3 No DVI Video



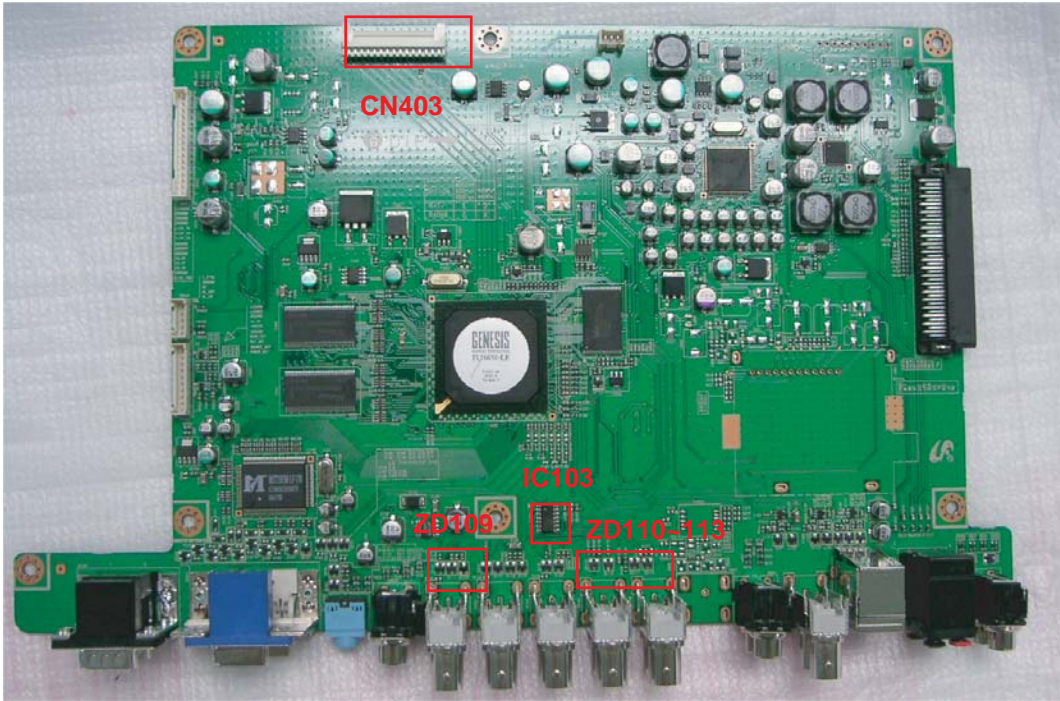
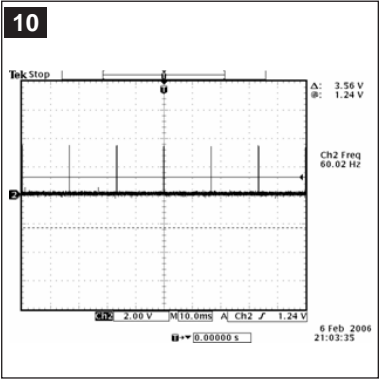
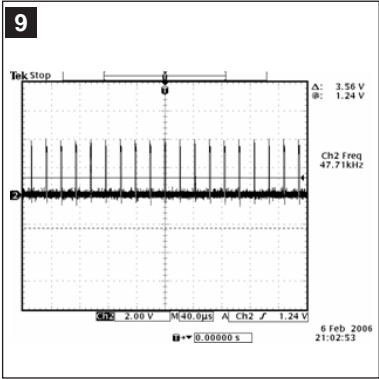
WAVEFORMS



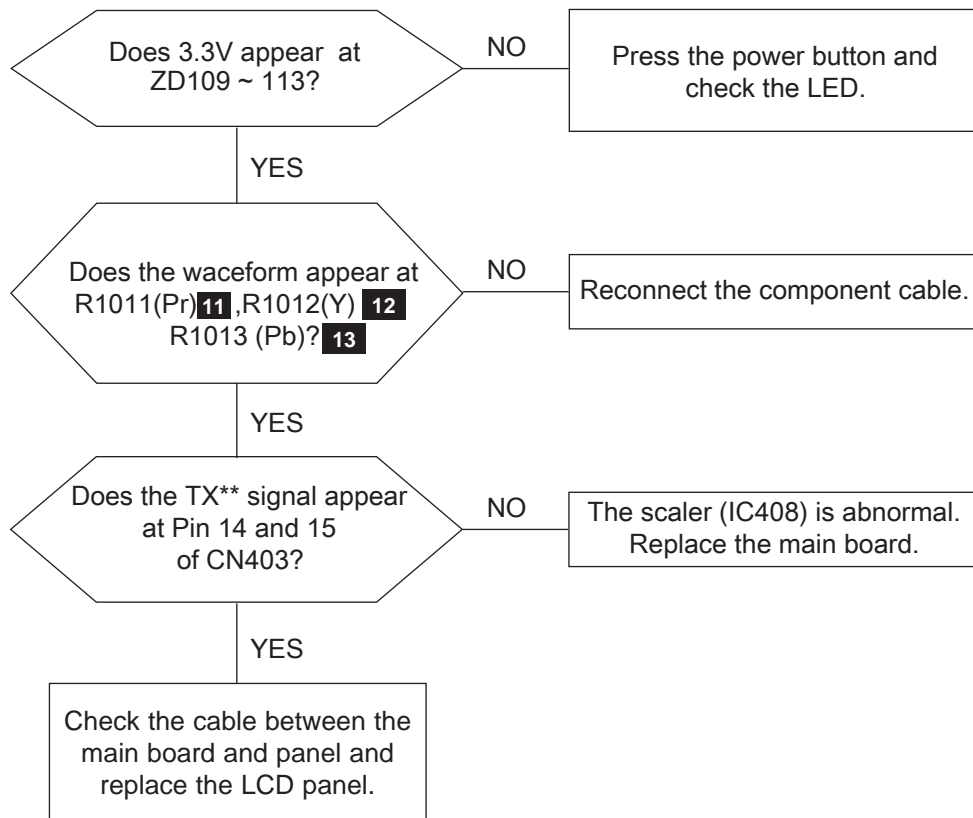
4-4 No BNC Video



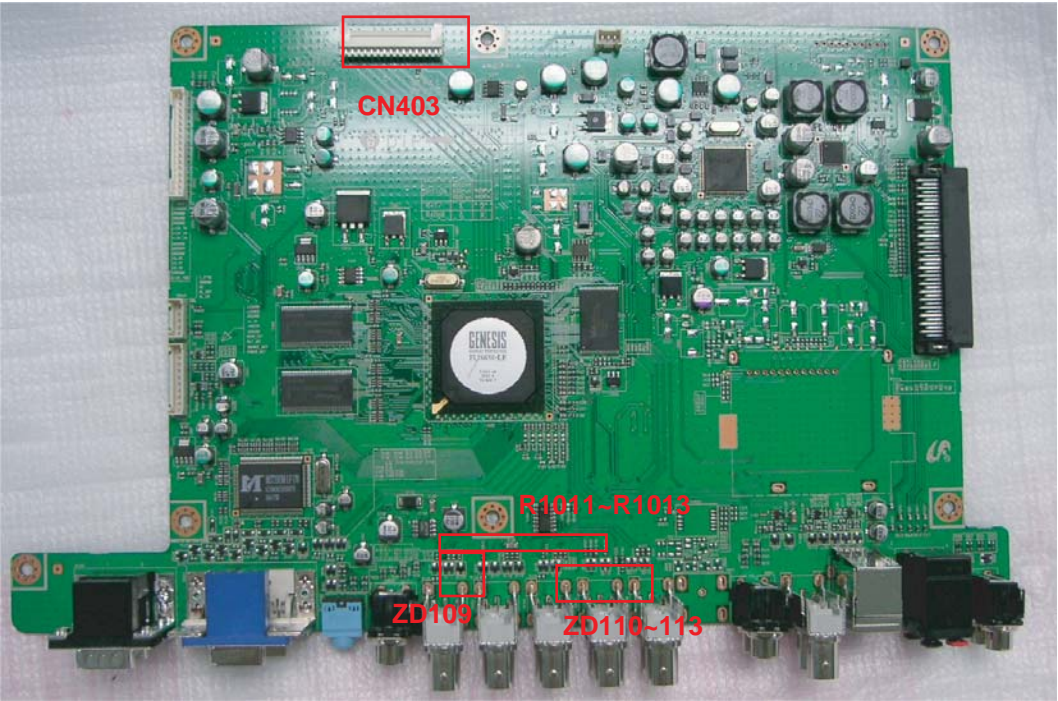
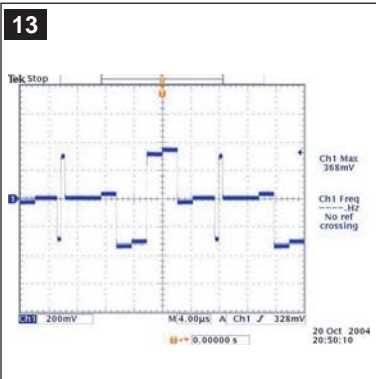
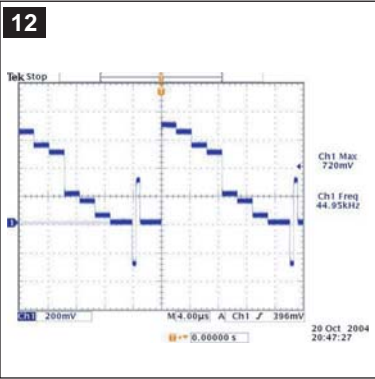
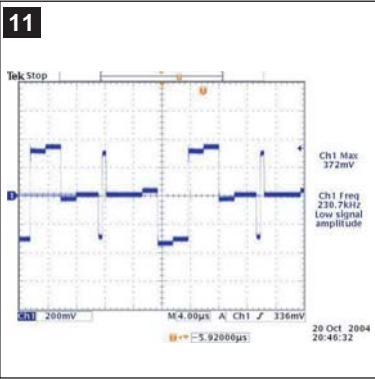
WAVEFORMS



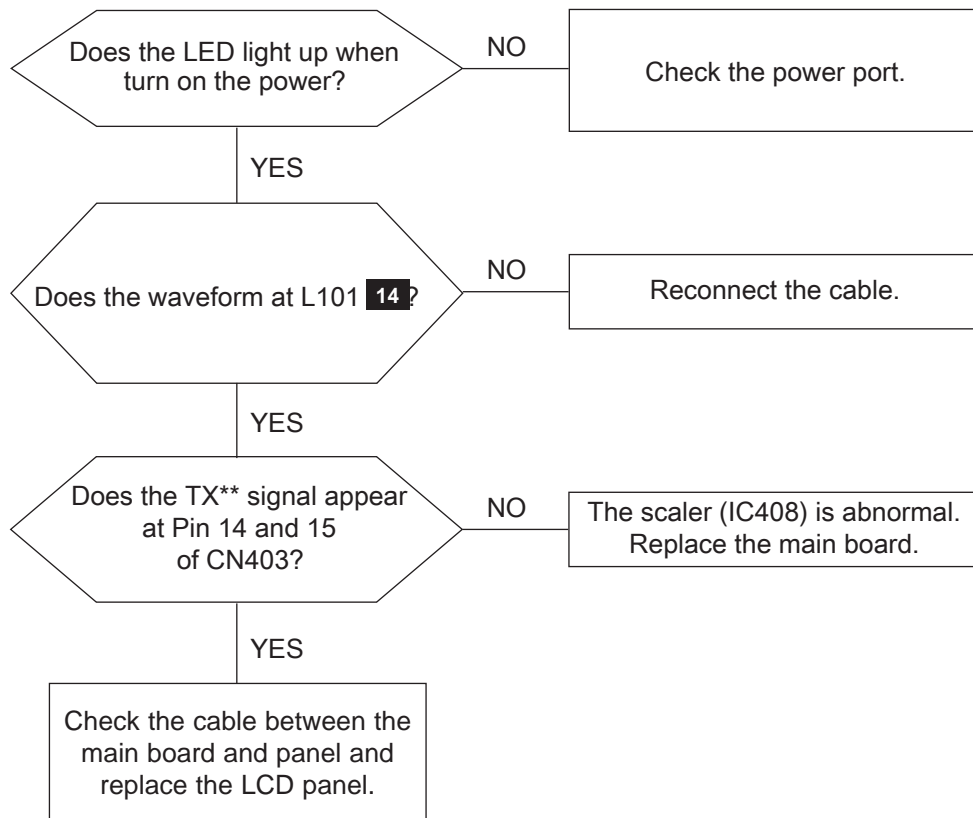
4-5 No Component Video



WAVEFORMS

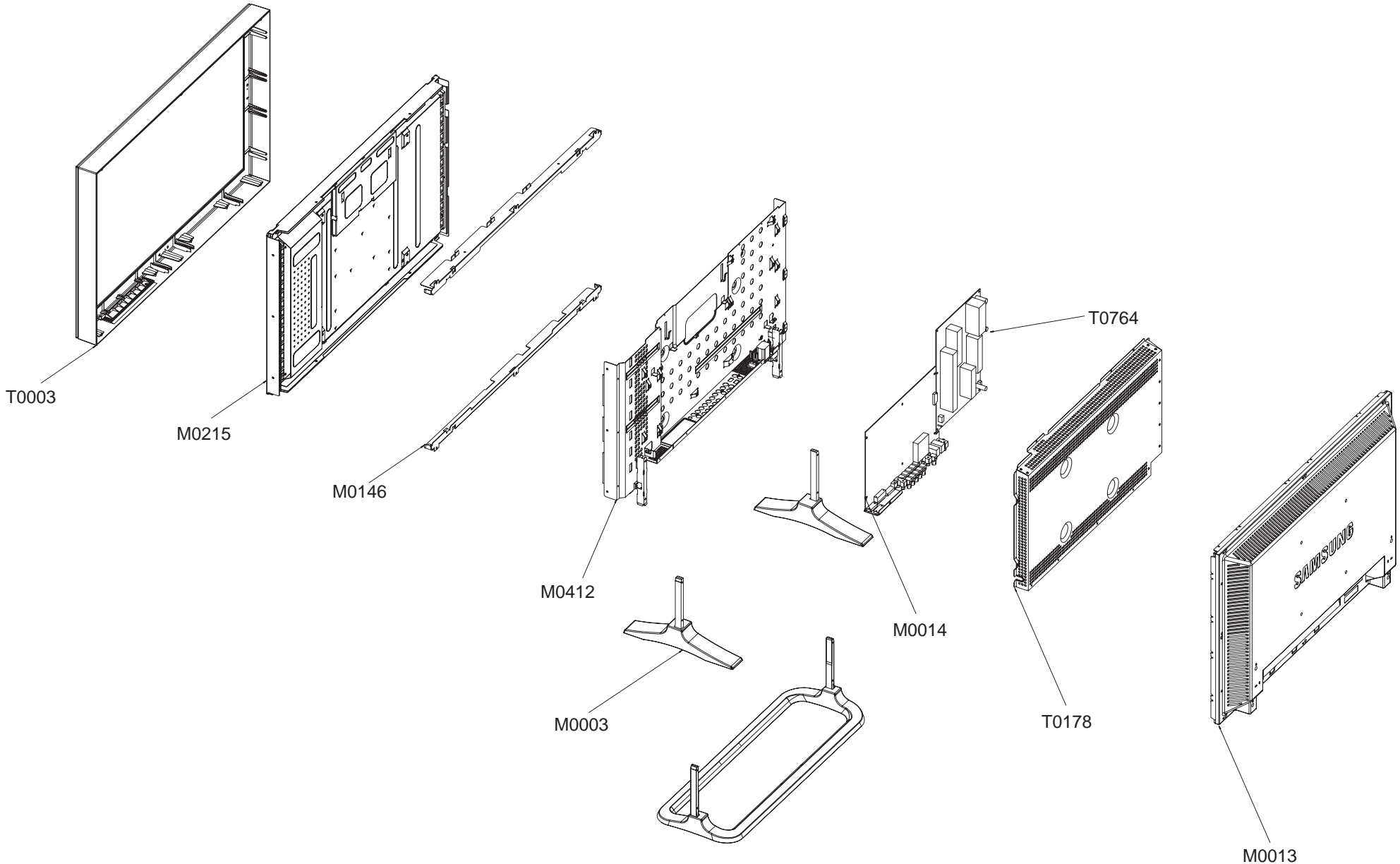


4-6 No Component Video



5 Exploded View & Parts List

5-1 Exploded View



5-2 Parts List

Location.No	CODE-NO	SPECIFICATION & DESCRIPTION	Q'TY	S.A/SNA
T0003	BN96-02512K	ASSY COVER P-FRONT;LS32BH (S/M 320PX),HI	1	S.A
M0215	BN07-00368A	LCD-PANEL;LTA320WT-L16,LTA320WT-L16,8bit	1	S.A
M0146	BN61-01993A	BRACKET-PANEL TOP;BE32PS,SECC,T1.2	2	S.N.A
M0412	BN96-02514E	ASSY BRACKET P-PCB;BEETHOVEN,SECC,1.0,BE	1	S.N.A
T0764	BN44-00153A	SMPS-LCD MONITOR;MGM32MT,DYREL,AC/DC,180	1	S.A
M0014	BN94-00744K	ASSY PCB MAIN-SPZ;LS32BHPNS/EDC,W/W,AMLC	1	S.A
T0178	BN63-02123B	SHIELD-PCB;BEETHOVEN,SECC,1.0,BEETHOVEN3	1	S.N.A
M0013	BN96-02513C	ASSY COVER P-REAR;LS32BH,ABS V0 GR37	1	S.A
M0003	BN96-00452E	ASSY STAND P;BE46PS,AL DIECASTING,BKN-S2	1	S.A

6 Electrical Parts List

-You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr/>

6-1 Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
		LS32BHPNB/XSF	320PX,WXP1/S32P1-LBH,32,LCD-MO,CHINA		
0.1	M0001	BN90-01107C	ASSY COVER FRONT;LS32BHPNB/XSF	1	S.N.A
..2	T0003	BN96-02512K	ASSY COVER P-FRONT;LS32BH (S/M 320PX),HI	1	S.A
...3	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	4	S.N.A
...3	T0081	BN61-00408A	GUIDE-FUNCTION;CK40PS,ABS,GR503,HB	1	S.N.A
...3	M0112	BN63-02115B	COVER-FRONT;BE32PS,HIPS,T3.2,HB,BK502	1	S.N.A
...3	M0007	BN64-00156D	KNOB-FUNCTION;BE46PS,ABS,HB,BK07	1	S.N.A
...3	T0299	BN64-00352A	WINDOW-RMC LED;BEETHOVEN 46,PC,ACRAY,BKM	1	S.N.A
...3	M0020	BN96-03565A	ASSY BOARD P;BEETHOVEN 2,FUNCTION & IR	1	S.A
...3		AA64-04418A	LOGO-BADGE;Z50,AL,1.2,2g,65mm,SILVER,SAM	1	S.N.A
..2	T0382	BP61-00495C	HOLDER-CARE;PJT,ACRYL-FOAM,T0.25,W30.0mm	0.2	S.N.A
0.1	M0002	BN90-01108A	ASSY COVER REAR;LS32BHPNS/EDC	1	S.N.A
..2	M0081	6003-001026	SCREW-TAPTITE;RH,+,-,B,M4,L15,ZPC(BLK),SWR	6	S.A
..2	M0013	BN96-02513C	ASSY COVER P-REAR;LS32BH,ABS V0 GR37	1	S.A
...3	M0081	6003-001321	SCREW-TAPTITE;BH,+,-,B,M4,L8,ZPC(BLK),SWRC	4	S.A
...3		BN61-00076B	GUIDE-HOOK;LS32BEP,STS,T2.0,BKN-S204	2	S.N.A
...3	M0113	BN61-01505B	BRACKET-VESA;LS32BEP,SECC,1.6	1	S.N.A
...3	T0578	BN64-00405B	INLAY AV;BEETHOVEN32",PS,0.5,LS32BH	1	S.N.A
...3	M0006	BN63-02117B	COVER-REAR;BEETHOVEN,ABS,3.0,V0,GR37,BEE	1	S.N.A
0.1	M0017	BN91-01013P	ASSY CHASSIS-SPZ;LS32BHPNS/EDC	1	S.N.A
..2	M0014	BN94-00744K	ASSY PCB MAIN-SPZ;LS32BHPNS/EDC,W/W,AMLC	1	S.A
...3	T0245	0202-001492	SOLDER-WIRE FLUX;HSE-02 LFM48 SR-34 S,-	0.25	S.N.A
...3	CN109	3701-001312	CONNECTOR-DSUB;9P/2C,2R,MALE,ANGLE,AUF	1	S.A
...3	CN101	3701-001334	CONNECTOR-DVI;24P(DVI)+15P(D-SUB),6,FEMA	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3705-001360	CONNECTOR-COAXIAL;BNC,FEMALE,-,75ohm,-	1	S.A
...3	CN906	3711-004182	CONNECTOR-HEADER;BOX,10P,1R,2MM,STRAIGHT	1	S.A
...3	CN330	3711-004349	HEADER-BOARD TO CABLE;BOX,3P,1R,2mm,STRA	1	S.A
...3	CN330	3711-004484	HEADER-BOARD TO CABLE;BOX,5P,1R,2mm,STRA	1	S.A
...3	CN403	3711-005884	HEADER-BOARD TO BOARD;BOX,30P,2R,2mm,ANG	1	S.A
...3	CN330	3711-005942	HEADER-BOARD TO CABLE;BOX,16P,1R,2mm,STR	1	S.A
...3	CN110	3722-002000	JACK-DIN;4P/2C,NI,BLK,ANGLE	1	S.A
...3	CN502	3722-002081	JACK-EAR PHONE;5P/2C,-,SnPb,L-BLU,-	1	S.A
...3	JA333	3722-002285	JACK-PIN;2P,NI,WHT/RED,ANGLE	1	S.A
...3	JA333	3722-002285	JACK-PIN;2P,NI,WHT/RED,ANGLE	1	S.A
...3	JA333	3722-002285	JACK-PIN;2P,NI,WHT/RED,ANGLE	1	S.A
...3	T0562	6046-001014	STAND OFF;#4-40,L6,NI PLT,C3601,-	8	S.N.A
...3	CN506	BN37-00004A	CONN TERMINAL;PST038-01,BE32PXn,27.5 mm,	1	S.A
...3	CIS	BN63-01710B	SHIELD-JACK;BE46PS,SPT,0.5,CHANGE CORE	1	S.N.A
...3	T0174	BN97-00894H	ASSY SMD;LS32BHPNS/EDC,W/W	1	S.N.A
...4	SUB05	0202-001477	SOLDER-CREAM;LST309-M,-,D20-45\$,96.5Sn/	3.663	S.N.A
...4	D101	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D102	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D103	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D104	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D105	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	D106	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D107	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D108	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D109	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D110	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D111	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D113	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D114	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D115	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D116	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D117	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D118	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D119	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D120	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D122	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D123	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D124	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D125	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D126	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D127	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D128	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D129	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D130	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D131	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D132	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D133	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
...4	D140	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D141	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D142	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D143	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D144	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D145	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D146	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D147	0401-001099	DIODE-SWITCHING;1N4148WS,75V,150mA,SOD-3	1	S.A
...4	D112	0402-000553	DIODE-SCHOTTKY;SS24/B240,40V,2000mA,DO-2	1	S.A
...4	D603	0402-000553	DIODE-SCHOTTKY;SS24/B240,40V,2000mA,DO-2	1	S.A
...4	ZD601	0402-000553	DIODE-SCHOTTKY;SS24/B240,40V,2000mA,DO-2	1	S.A
...4	ZD602	0402-000553	DIODE-SCHOTTKY;SS24/B240,40V,2000mA,DO-2	1	S.A
...4	D516	0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	S.A
...4	D513	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A
...4	D514	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A
...4	ZD403	0403-000277	DIODE-ZENER;MMBZ5226B,3.14-3.47V,225MW,S	1	S.A
...4	ZD404	0403-000277	DIODE-ZENER;MMBZ5226B,3.14-3.47V,225MW,S	1	S.A
...4	ZD101	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD103	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD104	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD105	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD107	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD108	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD109	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD119	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD124	0403-000579	DIODE-ZENER;BZX84C5V1,4.8-5.4V,200mW,SOT	1	S.A
...4	ZD110	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD111	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD112	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD113	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD115	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD116	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD117	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A
...4	ZD118	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	ZD120	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	SA
....4	ZD121	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	SA
....4	ZD122	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	SA
....4	ZD123	0403-001052	DIODE-ZENER;RD8.2MB,7.7-8.7V,200mW,SOT-2	1	SA
....4	ZD102	0403-001435	DIODE-ZENER;QZX363C5V6,5.32-5.88V,200MW,	1	SA
....4	ZD106	0403-001435	DIODE-ZENER;QZX363C5V6,5.32-5.88V,200MW,	1	SA
....4	ZD401	0403-001435	DIODE-ZENER;QZX363C5V6,5.32-5.88V,200MW,	1	SA
....4	ZD402	0403-001435	DIODE-ZENER;QZX363C5V6,5.32-5.88V,200MW,	1	SA
....4	D6020	0404-001271	DIODE-SCHOTTKY;SSA34,40V,3000mA,SMA,TP	1	SA
....4	D501	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D502	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D503	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D504	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D505	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D506	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D507	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D508	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D509	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D510	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D511	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D512	0406-001163	DIODE-TVS;CDS3C05GTA,6.4V/-/-,SMD	1	SA
....4	D515	0407-000123	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	1	SA
....4	Q501	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	1	SA
....4	Q101	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q102	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q103	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q401	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q502	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q503	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q504	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q505	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q506	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q603	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q604	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q605	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q606	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q607	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA
....4	Q409	0505-000275	FET-SILICON;SI4435DY,P,-30V,+8.0A,0.014	1	SA
....4	Q409	0505-001170	FET-SILICON;SI9933ADY-T1,P,-20V,3.4A,0.0	1	SA
....4	IC104	0801-002171	IC-CMOS LOGIC;74LCX125,BUS BUFFER,SOP,14	1	SA
....4	IC104	0801-002267	IC-CMOS LOGIC;74LCX14,-,SOIC,14P,150MIL,	1	SA
....4	IC104	0801-002267	IC-CMOS LOGIC;74LCX14,-,SOIC,14P,150MIL,	1	SA
....4	IC105	0909-001032	IC-REAL TIME CLOCK;PCF8563,SOP,8P,4.9x3.	1	SA
....4	IC501	1001-000164	IC-ANALOG MULTIPLEX;74HC4052,CMOS,SOP,16	1	SA
....4	IC408	1003-002000	IC-CRT CONTROLLER;FLI8638-LF-BC,PBGA,416	1	SA
....4	IC110	1006-001076	IC-DRIVER/RECEIVER;MAX232ECWE+T,SOP,16P,	1	SA
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8Bit,SOP,8P,5x	1	SA
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8Bit,SOP,8P,5x	1	SA
....4	IC112	1103-001195	IC-EEPROM;24C64,64Kbit,8Kx8Bit,SOP,-,5x4	1	SA
....4	IC113	1105-001712	IC-DRAM;HYB25D256163CE,DDR,256Mbit,16Mx1	1	SA
....4	IC113	1105-001712	IC-DRAM;HYB25D256163CE,DDR,256Mbit,16Mx1	1	SA
....4	T0085	1201-002119	IC-AUDIO AMP;TPA3004D2,HTQFP,48P,7x7mm,-	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	DU410	1201-002333	IC-OP AMP;EL5167,SOT-23,TP,5P,2.9x1.6mm,	1	SA
....4	IC404	1203-001109	IC-VOL. DETECTOR;7045,SOT-89,3P,-,PLASTI	1	SA
....4	IC407	1203-001109	IC-VOL. DETECTOR;7045,SOT-89,3P,-,PLASTI	1	SA

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Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	IC507	1203-001109	IC-VOL. DETECTOR;7045,SOT-89,3P,-,PLASTI	1	S.A
...4	T0087	1203-001293	IC-POS.FIXED REG.;033,TO-252,3P,6.5MIL,	1	S.A
...4	T0087	1203-001816	IC-POS.FIXED REG.;78M08,TO-252,3P,-,PLA	1	S.A
...4	T0087	1203-001890	IC-POS.FIXED REG.;3961,SOT223-5,5P,-,PL	1	S.A
...4	T0087	1203-001890	IC-POS.FIXED REG.;3961,SOT223-5,5P,-,PL	1	S.A
...4	T0087	1203-002186	IC-POS.FIXED REG.;18,DPAK,3P,240MIL,PLA	1	S.A
...4	T0087	1203-002186	IC-POS.FIXED REG.;18,DPAK,3P,240MIL,PLA	1	S.A
...4	T0087	1203-002699	IC-POS.FIXED REG.;78D05,DPAK,3P,6.6X6.1	1	S.A
...4	T0170	1203-003059	IC-SWITCH VOL. REG.;MP1583,SOIC,8P,4.9x3	1	S.A
...4	T0087	1203-003060	IC-POS.FIXED REG.;AP1084,TO-263,3P,9.97	1	S.A
...4	IC108	1203-003473	IC-VOL.CONVERTER;LT1054L,SOP,8P,4.9x3.9m	1	S.A
...4	T0087	1203-003695	IC-POS.FIXED REG.;NCP1117ST33T3G,SOT-22	1	S.A
...4	T0087	1203-003952	IC-POS.FIXED REG.;KA7805ERTM,DPAK,3P,6.	1	S.A
...4	IC502	1204-002464	IC-AUDIO PROCESSOR;STV8257DSX,TQFP,80P,1	1	S.A
...4	IC105	1205-002763	IC-RECEIVER;MST3383M-LF-170,PQFP,128P,20	1	S.A
...4	T0900	1404-001386	THERMISTOR-NTC;10Kohm,3975K,2.1mW/C,TP	1	S.A
...4	R412	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	S.A
...4	R417	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	S.A
...4	R466	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	S.A
...4	R1017	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R1018	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R1019	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R134	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R135	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R142	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R143	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4033	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4039	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4063	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4068	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4074	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4075	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4077	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R4080	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R444	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R445	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R458	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R481	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R493	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R538	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R543	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R547	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R548	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R555	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R557	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R568	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R571	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R572	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R574	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R575	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A
...4	R1006	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R1007	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R121	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R122	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R160	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R163	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R188	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R4034	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R432	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A
...4	R460	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A

[illegible]

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	R144	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R147	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4076	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R467	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R511	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R513	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R515	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R517	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R519	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R523	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R532	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R534	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R537	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R540	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R559	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R570	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R577	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R578	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R576	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	S.A
...4	R469	2007-000081	R-CHIP;2.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4013	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4014	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4015	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4016	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R484	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R485	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R549	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A
...4	R158	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R159	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R465	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R529	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R536	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R551	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R583	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R584	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R585	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R586	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R615	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R627	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R629	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R632	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R633	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R639	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R640	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
...4	R109	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R133	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R136	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R141	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4018	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4020	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R4032	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R437	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R505	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R542	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R550	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R652	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
...4	R567	2007-000091	R-CHIP;12Kohm,5%,1/10W,TP,1608	1	S.A
...4	R544	2007-000093	R-CHIP;20Kohm,5%,1/10W,TP,1608	1	S.A
...4	R546	2007-000093	R-CHIP;20Kohm,5%,1/10W,TP,1608	1	S.A
...4	R626	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	R630	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R638	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	SA
....4	R501	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R502	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R503	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R504	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R506	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R507	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R508	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R509	2007-000100	R-CHIP;68Kohm,5%,1/10W,TP,1608	1	SA
....4	R566	2007-000103	R-CHIP;120Kohm,5%,1/10W,TP,1608	1	SA
....4	R446	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R447	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R448	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R449	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R450	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R451	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R452	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R453	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	SA
....4	R510	2007-000119	R-CHIP;560ohm,5%,1/10W,TP,1608	1	SA
....4	R564	2007-000122	R-CHIP;1.2Kohm,5%,1/10W,TP,1608	1	SA
....4	R530	2007-000124	R-CHIP;2.2Kohm,5%,1/10W,TP,1608	1	SA
....4	R131	2007-000126	R-CHIP;4.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R132	2007-000126	R-CHIP;4.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R139	2007-000126	R-CHIP;4.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R140	2007-000126	R-CHIP;4.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R565	2007-000126	R-CHIP;4.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R573	2007-000129	R-CHIP;27Kohm,5%,1/10W,TP,1608	1	SA
....4	R457	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608	1	SA
....4	R478	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608	1	SA
....4	R124	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R125	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R138	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R161	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R162	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R169	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R170	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R171	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	SA
....4	R423	2007-000643	R-CHIP;270ohm,5%,1/10W,TP,1608	1	SA
....4	R424	2007-000643	R-CHIP;270ohm,5%,1/10W,TP,1608	1	SA
....4	R605	2007-000683	R-CHIP;3.3Kohm,1%,1/10W,TP,1608	1	SA
....4	R1002	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R1003	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R1004	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R1005	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R176	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R177	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R178	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R180	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R185	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R186	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R189	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R191	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R462	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R463	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R464	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608	1	SA
....4	R156	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	SA
....4	R126	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	SA
....4	R127	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	SA
....4	R167	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	SA

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	R168	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R4064	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R4065	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R4067	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R433	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R434	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R435	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R496	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R579	2007-000869	R-CHIP;4.7Kohm,1%,1/10W,TP,1608	1	S.A
...4	R606	2007-000965	R-CHIP;5.1Kohm,5%,1/10W,TP,1608	1	S.A
...4	R602	2007-000979	R-CHIP;5.6Kohm,1%,1/10W,TP,1608	1	S.A
...4	R426	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
...4	R428	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
...4	R430	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
...4	R431	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
...4	R436	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
...4	R117	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R118	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R119	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R128	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R129	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R130	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R152	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R155	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R157	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R425	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R427	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R429	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
...4	R1008	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1009	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1011	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1012	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1013	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1014	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1015	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R1016	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R164	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R165	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R166	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R174	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R175	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R181	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R183	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R190	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R195	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R199	2007-001167	R-CHIP;75ohm,5%,1/10W,TP,1608	1	S.A
...4	R145	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R146	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R148	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R149	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R150	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R151	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R153	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	R154	2007-007520	R-CHIP;20ohm,1%,1/10W,TP,1608	1	S.A
...4	RA101	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A
...4	RA102	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A
...4	RA103	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A
...4	RA104	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A
...4	RA105	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A
...4	RA106	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	RA107	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	SA
....4	RA108	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	SA
....4	RA414	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	SA
....4	RA415	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	SA
....4	RA416	2011-000651	R-NET;10ohm,5%,1/16W,L,CHIP,8P,TP,3216	1	SA
....4	RA401	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA402	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA403	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA404	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA405	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA406	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA407	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA408	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA409	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA410	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA411	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA412	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	RA413	2011-000881	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,3.2x1.	1	SA
....4	C511	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C527	2203-000140	C-CER,CHIP;1.5nF,10%,50V,X7R,1608	1	SA
....4	C114	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C115	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C116	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C121	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C122	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C124	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C142	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C143	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C144	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C145	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C148	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C150	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C155	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C156	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4011	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4012	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4013	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4014	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4015	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4016	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4017	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4018	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4019	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4025	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4030	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4036	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C4044	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C405	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C407	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C408	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C409	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C410	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C412	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C414	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C419	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C420	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C421	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C422	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C423	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA
....4	C424	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	SA

6 Electrical Parts List

[illegible]

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	C5027	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C509	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C522	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C523	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C524	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C525	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C540	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C548	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C550	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C553	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C561	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C576	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C577	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C582	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C583	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C592	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C597	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C598	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C601	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C602	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6023	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6024	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6036	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6037	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6062	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6064	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C6066	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C617	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C634	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C635	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C648	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C654	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C656	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C674	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C675	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C679	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C687	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C688	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C117	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C118	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C125	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C126	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C171	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C172	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C515	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C624	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C403	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C404	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C406	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C411	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C413	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C415	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C416	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C452	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C455	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C456	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C458	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C461	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C463	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
....4	C465	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	C468	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C474	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C5016	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C5017	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C514	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C609	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C612	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A
...4	C4033	2203-000384	C-CER,CHIP;0.015nF,5%,50V,C0G,1608	1	S.A
...4	C4026	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C4028	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C4040	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C4042	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C517	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C518	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C519	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C520	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C546	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C547	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C571	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C572	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C573	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C574	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C637	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608	1	S.A
...4	C127	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C128	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C4031	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C4032	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C535	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C544	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A
...4	C5012	2203-000753	C-CER,CHIP;330nF,+80-20%,50V,Y5V,TP,3216	1	S.A
...4	C5022	2203-000753	C-CER,CHIP;330nF,+80-20%,50V,Y5V,TP,3216	1	S.A
...4	C5023	2203-000753	C-CER,CHIP;330nF,+80-20%,50V,Y5V,TP,3216	1	S.A
...4	C575	2203-000753	C-CER,CHIP;330nF,+80-20%,50V,Y5V,TP,3216	1	S.A
...4	C4043	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	S.A
...4	C551	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	S.A
...4	C552	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608	1	S.A
...4	C563	2203-000798	C-CER,CHIP;33nF,10%,16V,X7R,TP,1608,-	1	S.A
...4	C564	2203-000798	C-CER,CHIP;33nF,10%,16V,X7R,TP,1608,-	1	S.A
...4	C569	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	S.A
...4	C570	2203-000888	C-CER,CHIP;4.7nF,10%,50V,X7R,1608	1	S.A
...4	C529	2203-000972	C-CER,CHIP;47nF,10%,16V,X7R,1608	1	S.A
...4	C5010	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	S.A
...4	C5011	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	S.A
...4	C578	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	S.A
...4	C579	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	1	S.A
...4	C4022	2203-001071	C-CER,CHIP;0.056nF,5%,50V,C0G,1608	1	S.A
...4	C101	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C102	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C104	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C163	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C164	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C165	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C166	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C167	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C168	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C169	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C170	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C516	2203-001402	C-CER,CHIP;220nF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C593	2203-001607	C-CER,CHIP;0.22nF,5%,50V,NP0,1608	1	S.A
...4	C4038	2203-001652	C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	C567	2203-001652	C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608	1	SA
....4	C568	2203-001652	C-CER,CHIP;470nF,+80-20%,16V,Y5V,1608	1	SA
....4	C512	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C526	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,1608	1	SA
....4	C105	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C108	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C109	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C119	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C120	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C123	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C132	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C134	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C136	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C137	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C138	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C139	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C146	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C149	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C151	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C152	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C153	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C154	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C502	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C536	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C537	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C538	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C539	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C557	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C565	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C6017	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C6019	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C6022	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C6069	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C630	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C632	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C668	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C623	2203-005015	C-CER,CHIP;150nF,+80-20%,16V,Y5V,1608	1	SA
....4	C4020	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4021	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4024	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4034	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4035	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4051	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C4052	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C586	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C587	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C588	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C589	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C590	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6010	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6011	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6012	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6013	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6014	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6015	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6016	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6027	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6028	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6029	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA
....4	C6033	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	SA

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Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...4	C6035	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C6040	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C652	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C660	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C691	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C692	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C693	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C694	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C695	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C696	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
...4	C130	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C133	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C135	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C141	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C401	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C402	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C4027	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C4037	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C4041	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C4045	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C4046	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C417	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C418	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C432	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C433	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C453	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C454	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C470	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C471	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C475	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C477	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C482	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C488	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C490	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C494	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C580	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C633	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
...4	C585	2203-006036	C-CER,CHIP;680NF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C594	2203-006036	C-CER,CHIP;680NF,+80-20%,16V,Y5V,TP,1608	1	S.A
...4	C541	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C542	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C554	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C555	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C560	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C562	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	1	S.A
...4	C584	2402-001081	C-AL,SMD;100uF,20%,25V,WT,TP,8.3x8.3x10	1	S.A
...4	C599	2402-001081	C-AL,SMD;100uF,20%,25V,WT,TP,8.3x8.3x10	1	S.A
...4	C653	2402-001081	C-AL,SMD;100uF,20%,25V,WT,TP,8.3x8.3x10	1	S.A
...4	C678	2402-001081	C-AL,SMD;100uF,20%,25V,WT,TP,8.3x8.3x10	1	S.A
...4	C129	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C131	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C510	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C591	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C6020	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C677	2402-001128	C-AL,SMD;100uF,20%,16V,-,TP,6.3X5.7mm	1	S.A
...4	C4023	2402-001129	C-AL,SMD;47UF,20%,16V,WT,TP,6.3X5.2MM	1	S.A
...4	C508	2402-001129	C-AL,SMD;47UF,20%,16V,WT,TP,6.3X5.2MM	1	S.A
...4	C521	2402-001129	C-AL,SMD;47UF,20%,16V,WT,TP,6.3X5.2MM	1	S.A
...4	C530	2402-001129	C-AL,SMD;47UF,20%,16V,WT,TP,6.3X5.2MM	1	S.A
...4	C665	2402-001147	C-AL,SMD;3.3UF,20%,50V,WT,TP,4X5.8MM	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	C4039	2402-001160	C-AL,SMD;330UF,20%,16V,WT,TP,1008	1	SA
....4	C566	2402-001160	C-AL,SMD;330UF,20%,16V,WT,TP,1008	1	SA
....4	C6018	2402-001160	C-AL,SMD;330UF,20%,16V,WT,TP,1008	1	SA
....4	C6060	2402-001160	C-AL,SMD;330UF,20%,16V,WT,TP,1008	1	SA
....4	C5015	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C503	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C504	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C505	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C506	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C507	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C513	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C532	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C534	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C543	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C545	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C549	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C556	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C558	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C559	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C6026	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C6032	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C6034	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C6039	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C6068	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C690	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C699	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8mm	1	SA
....4	C103	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C501	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C528	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C531	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C533	2402-001183	C-AL,SMD;22UF,20%,16V,WT,TP,5.3X5.3X6MM	1	SA
....4	C6025	2409-001046	C-ORGANIC,SMD;39uF,20%,16V,WT,TP,6.3x6 mm	1	SA
....4	C4029	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C6021	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C6030	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C6031	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C6067	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C616	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C622	2409-001065	C-ORGANIC;82uF,20%,16V,WT,TP,8X6.9mm,-	1	SA
....4	C603	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C6038	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C6061	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C6063	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C6065	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C636	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C647	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C655	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C667	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	C689	2409-001085	C-ORGANIC;47UF,20%,10V,WT,TP,5*5.7MM,1.4	1	SA
....4	T0052	2703-000158	INDUCTOR-SMD;1uH,10%,2012	1	SA
....4	T0052	2703-000158	INDUCTOR-SMD;1uH,10%,2012	1	SA
....4	T0052	2703-000158	INDUCTOR-SMD;1uH,10%,2012	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA
....4	T0052	2703-000398	INDUCTOR-SMD;10uH,10%,3225	1	SA

6 Electrical Parts List

[illegible]

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
0.1	T0175	BN91-01014L	ASSY SHIELD-SPZ;LS32BHPNS/EDC	1	S.N.A
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	1	S.N.A
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	9	S.N.A
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	5	S.N.A
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	12	S.N.A
..2	M0081	6003-000337	SCREW-TAPTITE;BH,+,S,M4,L10,ZPC(BLK),SWR	4	S.A
..2	M0081	6003-000337	SCREW-TAPTITE;BH,+,S,M4,L10,ZPC(BLK),SWR	4	S.A
..2	M0081	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	6	S.A
..2	M0081	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	2	S.A
..2	M0114	AA61-20129A	HOLDER-WIRE;-NYLON-66,-,-,NTR,DAFC-25	1	S.N.A
..2	M2893	BN39-00634B	LEAD CONNECTOR-LVDS;LS40BHT,UL20276#30,U	1	S.A
..2	M2893	BN39-00778A	LEAD CONNECTOR;Beethoven2,UL2835#28,14,6	1	S.A
..2	T0764	BN44-00153A	SMPS-LCD MONITOR;MGM32MT,DYREL,AC/DC,180	1	S.A
..2	M0146	BN61-01993A	BRACKET-PANEL TOP;BE32PS,SECC,T1.2	2	S.N.A
..2	M0412	BN96-02514E	ASSY BRACKET P-PCB;BEETHOVEN,SECC,1.0,BE	1	S.N.A
...3	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	6	S.N.A
...3	T0081	6006-000245	SCREW-MACHINE;PH,+,WSP,M4,L8,ZPC(WHT),SW	1	S.N.A
...3	M0114	AA61-20069A	HOLDER-WIRE;-NYLON-66,-,-,NTR,V0,PAWH	2	S.N.A
...3	M0131	AA63-01188A	GASKET;BE32PS/BH32PS,Conductive Fabric,1	1	S.N.A
...3	M2893	BN39-00615H	LEAD CONNECTOR;LS40BHT,1617#22,UL/CSA,3P	1	S.A
...3	T0920	BN61-01991A	GUIDE-STAND;BE32PS,SECC,T1.2	2	S.N.A
...3	M0001	BN63-01956A	SHIELD-INSULATOR;BE46PS,PET,T0.35,V2	1	S.N.A
...3	T0178	BN63-02123B	SHIELD-PCB;BEETHOVEN,SECC,1.0,BEETHOVEN3	1	S.N.A
...3	M2893	BN39-00623A	LEAD CONNECTOR;BE46/40/32 PS/TS,UL1617#2	1	S.A
...3	M0131	AA63-01189A	GASKET;BE40TS,Conductive Fabric,10 mm,25	1	S.N.A
..2	M0006	BN96-02518C	ASSY SHIELD P-COVER;BEETHOVEN,SECC,0.5,B	1	S.N.A
...3	M0131	AA63-01212A	GASKET;BE40TS,Conductive Fabric,1mm,7mm,	1	S.N.A
...3		BN63-02116A	SHIELD-JACK;BE32PS,SECC,T1.0	1	S.N.A
...3	M0107	BN63-02122B	SHIELD-COVER;BEETHOVEN,SECC,0.5,BEETHOVE	1	S.N.A
...3	M0131	BN63-03223A	GASKET;Beethoven2 32",Conductive Fabric,	1	S.N.A
...3	M0131	BN63-03224A	GASKET;Beethoven2 32",Conductive Fabric,	1	S.N.A
..2	CIS	BN96-04474A	ASSY MISC P-HARNES;Beethoven2,UL1007#26	1	S.N.A
..2	M2893	BN39-00728A	LEAD CONNECTOR;LS40BHT,UL2464#26,10P,400	1	S.A
..2	M0104	BN63-03225A	EARTH-PLATE;BEETHOVEN 32",PBS,0.3	1	S.N.A
0.1	M0019	BN91-01017S	ASSY LCD;LS32BH*,AMLCD	1	S.N.A
..2	M0215	BN07-00368A	LCD-PANEL;LTA320WT-L16,LTA320WT-L16,8bit	1	S.A
0.1	M0019	BN92-01410Q	ASSY LABEL;LS32BEPNS/XSF,CHINA	1	S.N.A
0.1	M0113	BN92-01412D	ASSY P/MATERIAL;LS32BEPN*	1	S.N.A
..2	T0376	6902-000061	BAG AIR;LDPE,T0.2,L1000,W500,TRP,,,	0.017	S.N.A
..2	T0376	6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,-,-	0.006	S.N.A
..2	T0524	6902-000519	BAG PE;HDPE/NITRON(DOUBLE),T0.015/T0.05(1	S.N.A
..2	T0003	6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	16.7	S.N.A
..2	M0081	6902-000609	BAG ROLL;LDPE,T0.05,W2400,L1000,TRP,-,-	0.112	S.N.A
0.1	M0045	BN92-02256E	ASSY ACCESSORY;LS32BHPNB/XSF	1	S.N.A
..2	M0003	BN96-00452E	ASSY STAND P;BE46PS,AL DIECASTING,BKN-S2	1	S.A
...3	M0081	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	8	S.A
...3	M0126	BN69-00995A	BOX ACCESSORY-00;COMM,SW-1,A,YEL,60,440,	1	S.N.A
...3	M0142	BH61-40002A	FOOT-RUBBER;-NR,PMS428U,GA4237,-,-	4	S.N.A
...3		BN61-00419C	STAND-BASE R/L;CK40,AL DIECASTING,SPRAY,	2	S.N.A
...3		BN61-00424A	STAND-SUPPORT;CK40PS,AL D.C	2	S.N.A
..2	M0045	BN96-04546D	ASSY ACCESSORY;LS32BHPNB/XSF	1	S.A
...3	CN906	3705-001262	CONNECTOR-COAXIAL;BNC,ADAPTOR,2MOHM,75OH	4	S.A
...3	T0268	3903-000082	CBF-POWER CORD;DT,CN,IP3/YES(A),I(IEC C1	1	S.A
...3	T0524	6902-000110	BAG PE;LDPE,T0.05,W250,L400,TRP,28,2	2	S.N.A
...3	M0113	BH68-70455A	CARD-TESTED GOODS;ALL (CHINA),SAMAUNG,CH	1	S.N.A

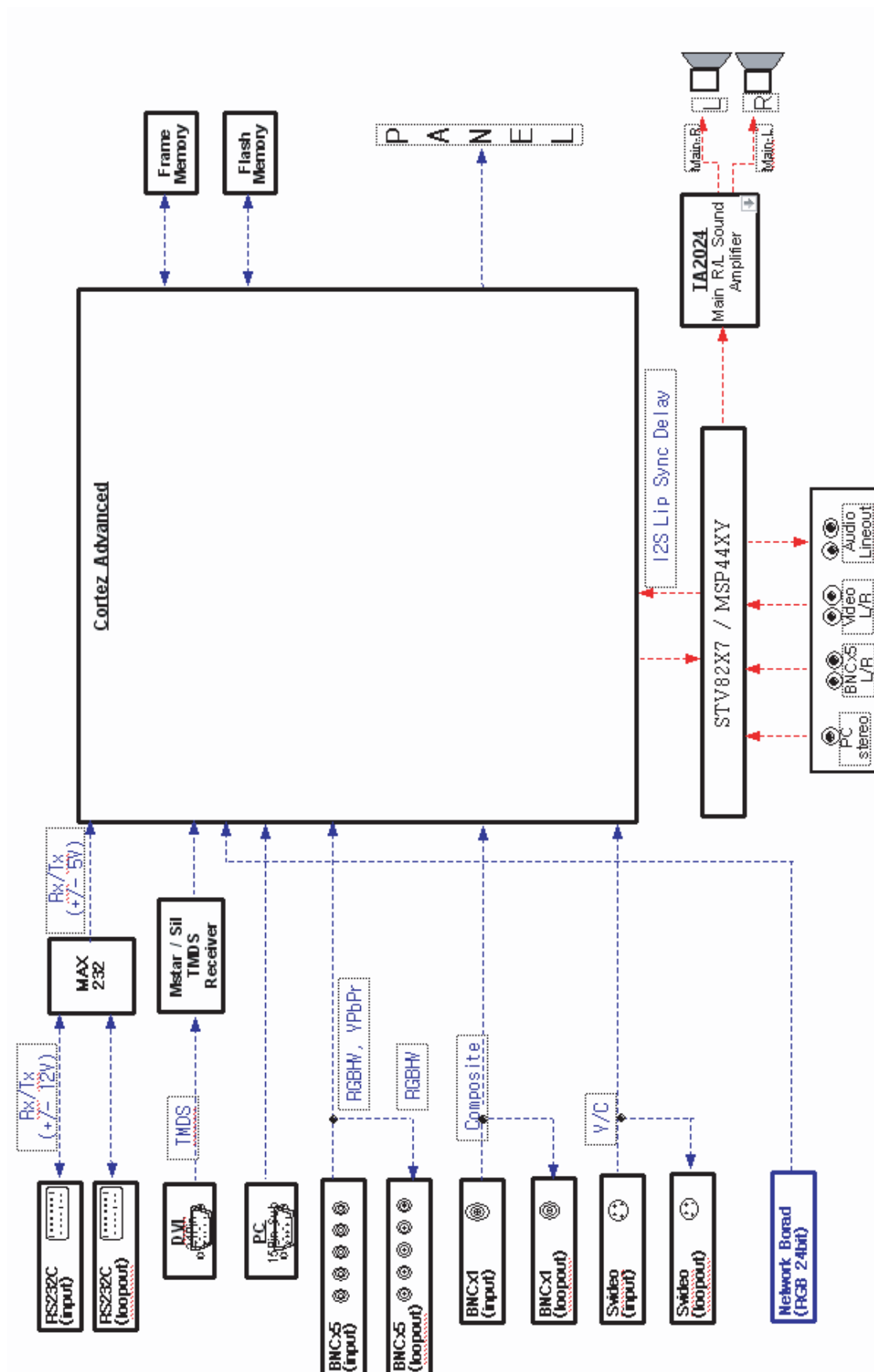
6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...3	ACCESSORY	BH75-00146B	UNIT-09,WARRANTY;CHINA,-,ASS'Y-W/CARD,BH	1	S.N.A
...4	T0238	BH68-00297E	MANUAL FLYER-WARRANTY CARD;SAMSUNG BASIC	1	S.N.A
...4	T0238	BH68-00297F	MANUAL FLYER-WARRANTY CARD;ENVELOPE,SAMS	1	S.N.A
...3	M0114	BN39-00244B	CBF SIGNAL;M015PS,15P/15P,20276-N,1830mm	1	S.A
...3	T0251	BN39-00530A	HARNESS;SPD-63P3HD,UL1007#22,UL/CSA,2000	2	S.A
...3	T0074	BN59-00489A	REMOCON;BEETHOVEN 2,TM76B,17.5x4.5x2,Sin	1	S.A
...3	T0059	BN68-00992A	MANUAL FLYER-CARD;COMM,SyncMaster,Lang11	1	S.N.A
...3	M0126	BN69-01086A	BOX ACCESSORY-00;COMM,SW1,YEL,-,W573,D63	1	S.N.A
...3	M0246	BN96-00597D	ASSY ACCESSORY-COVER/HOLE;LS32BEP,ABS HB	1	S.N.A
...4		6902-000336	BAG ZIPPER;LDPE,T0.05,W70,L80,TRP,-,-	1	S.N.A
...4	M0006	BN63-02121A	COVER-REAR BOTTOM;BE32PS,ABS,T3.0,HB	2	S.A
...3	M0215	BN96-03341E	ASSY MANUAL P-IB+QSG;320PX,SyncMaster,W/	1	S.N.A
...4	I/B	BN59-00528D	S/W DRIVER-00,IB;320PX,W/W,SyncMaster	1	S.N.A
...4	QSG	BN68-01021D	MANUAL FLYER-QSG;320PX,SyncMaster,Multe,	1	S.N.A
0.1	M0003	BN92-02308B	ASSY BOX;LS32BHPNB/XSF	1	S.N.A
..2	T0130	BN69-01395C	BOX-00,SET;S/M320PX(LS32BHP),CB,DY-01,AB	1.01	S.N.A

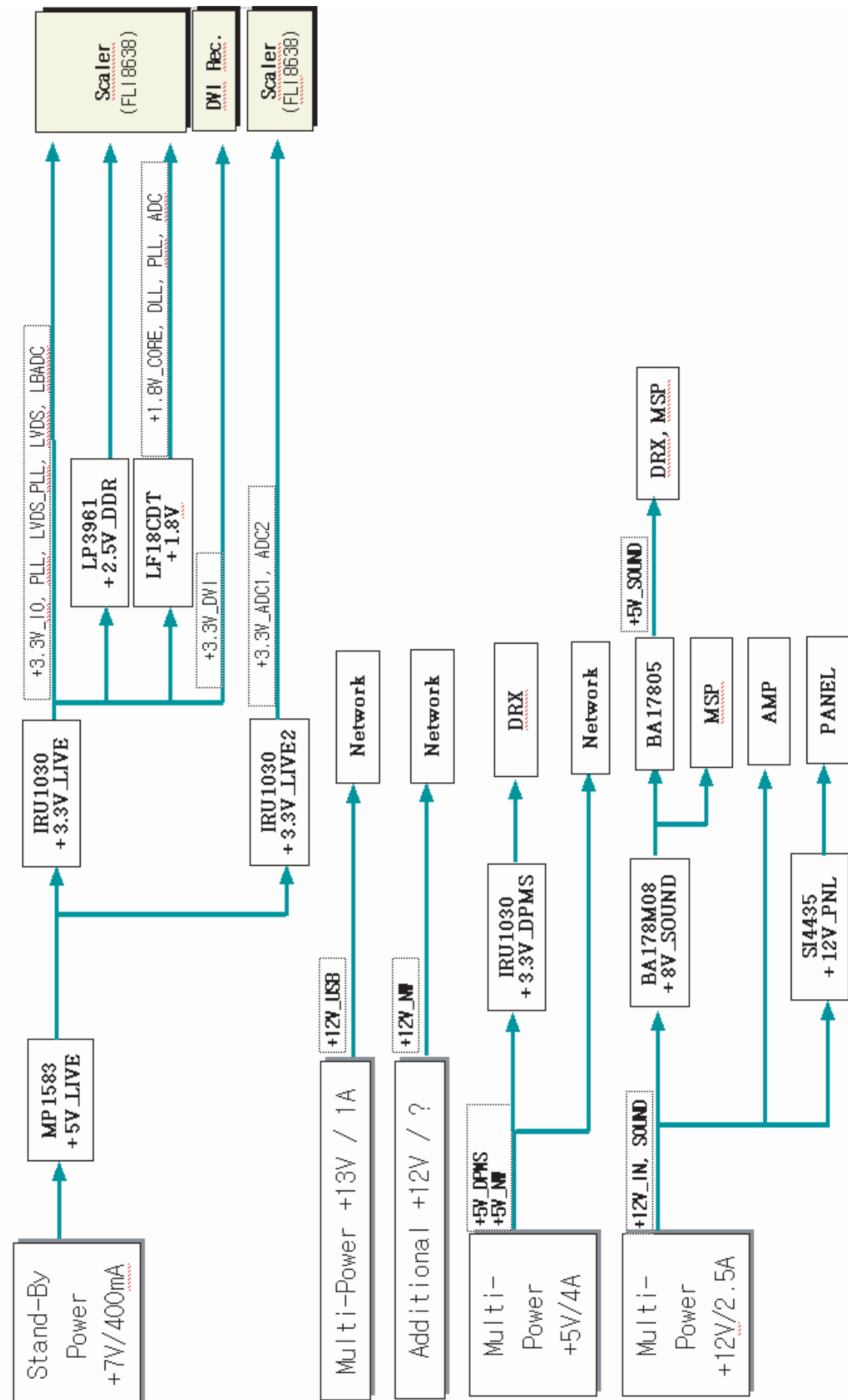
7 Block Diagram

- Document can not be used without Samsung's authorization.

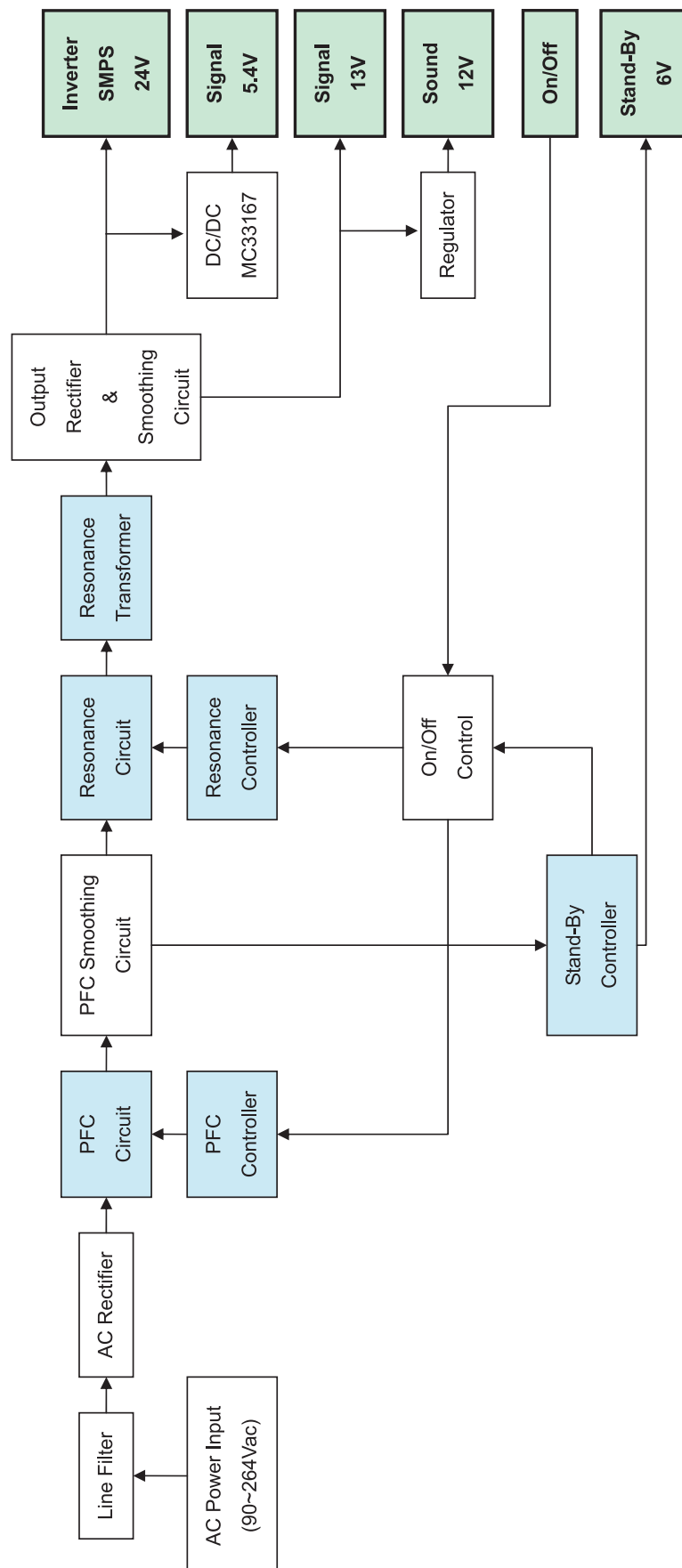
7-1 Main Block



7-2-1 Main - Power Block



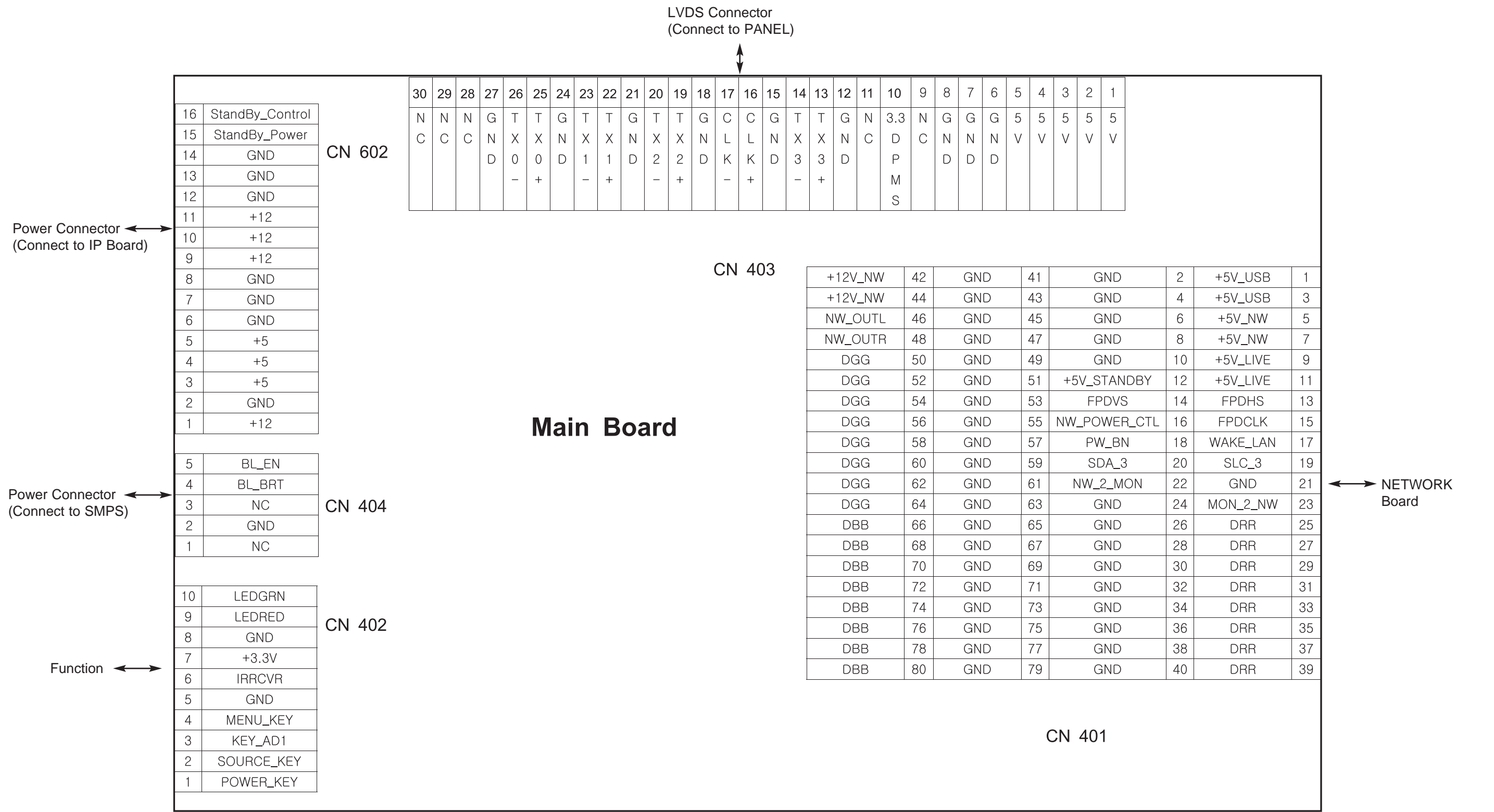
7-2 SMPS Board



Memo

8 Wiring Diagram

8-1 Main Board Wiring Diagram



8 Wiring Diagram

Memo

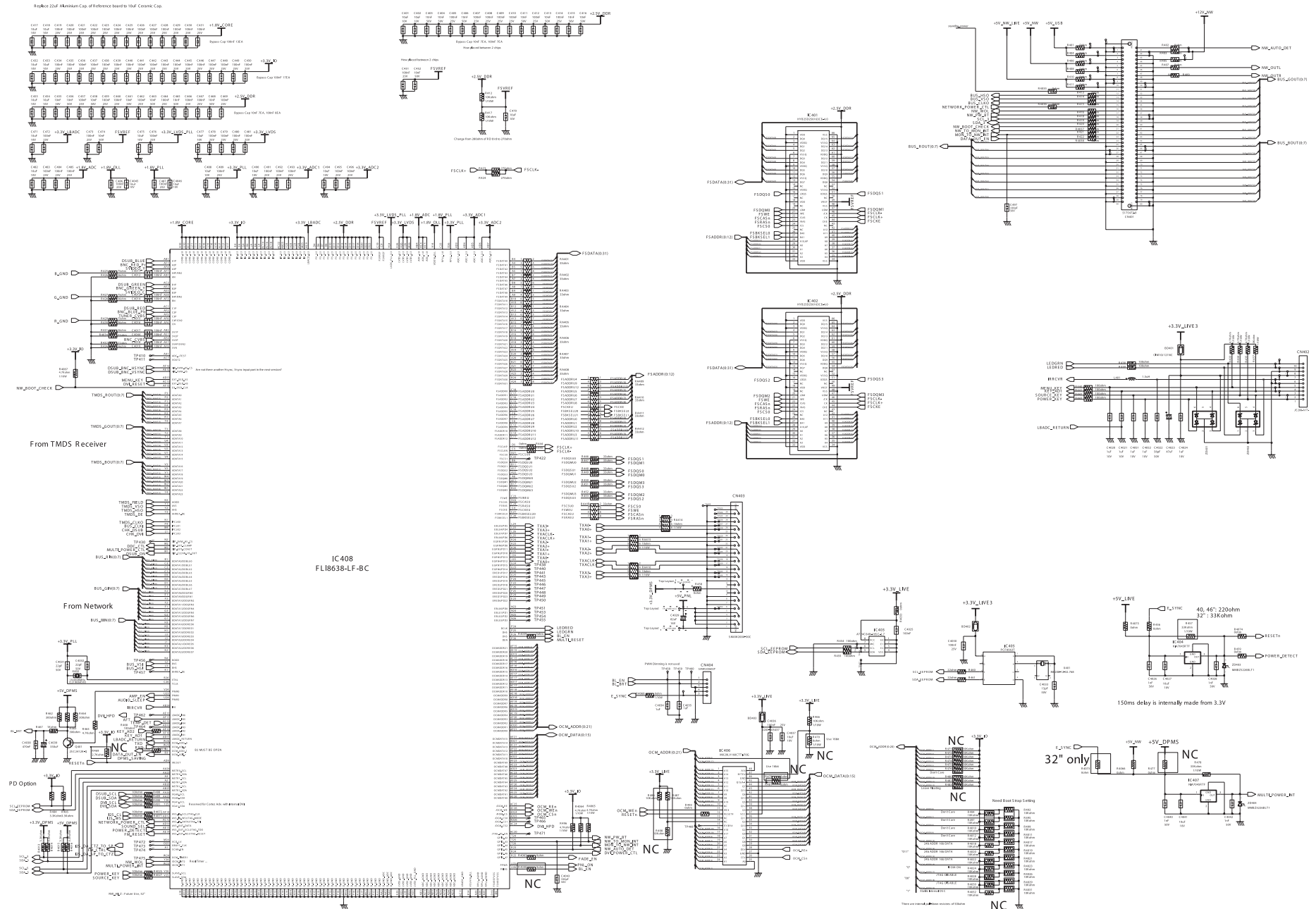
9-1 Main board Schematics Diagram(Signal input)



9-1-2 Main board Schematics Diagram (SOUND)



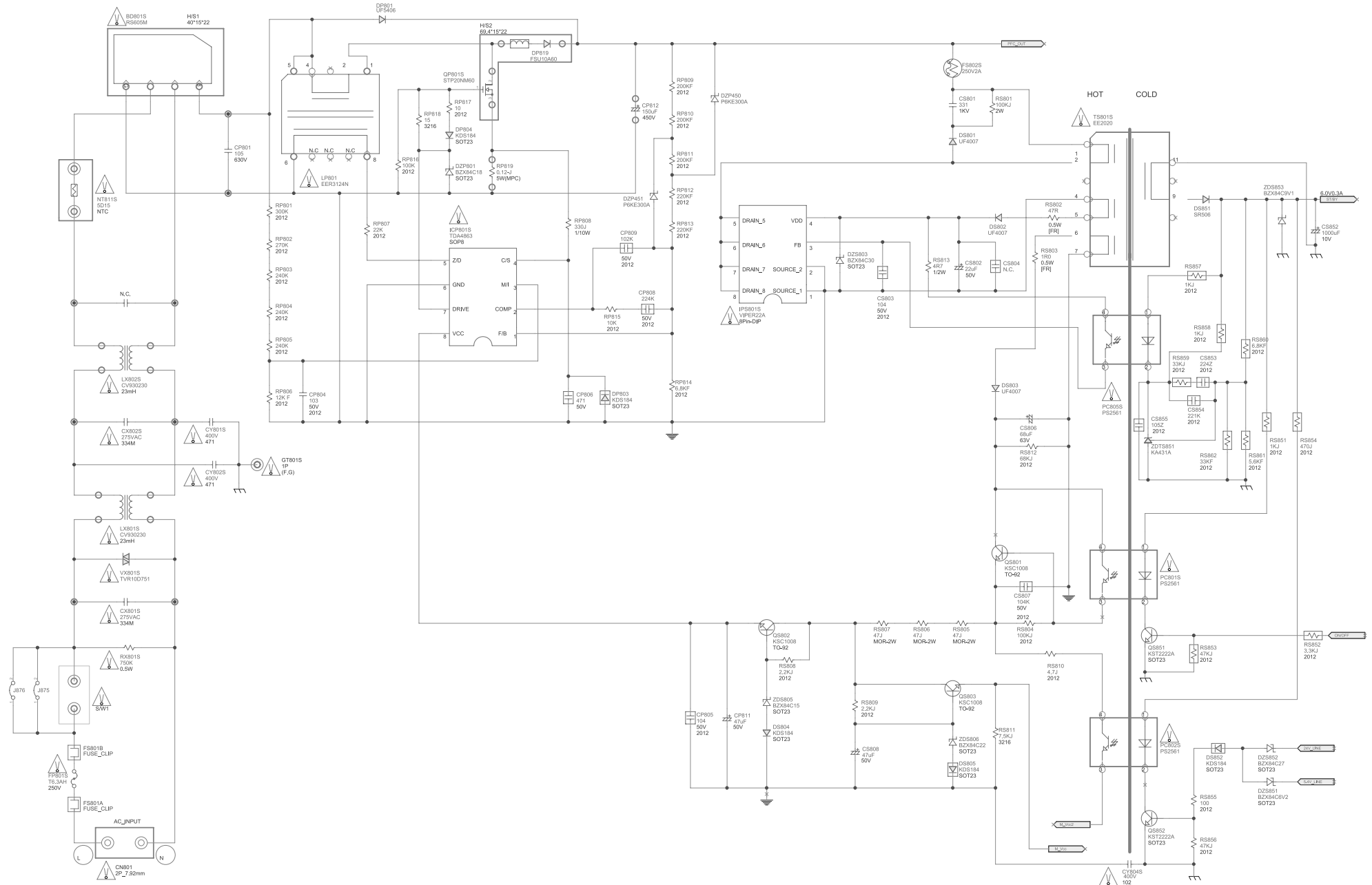
9-1-3 Main board Schematics Diagram (SCALER)



9-1-4 Main board Schematics Diagram (Power & Tuner Option)

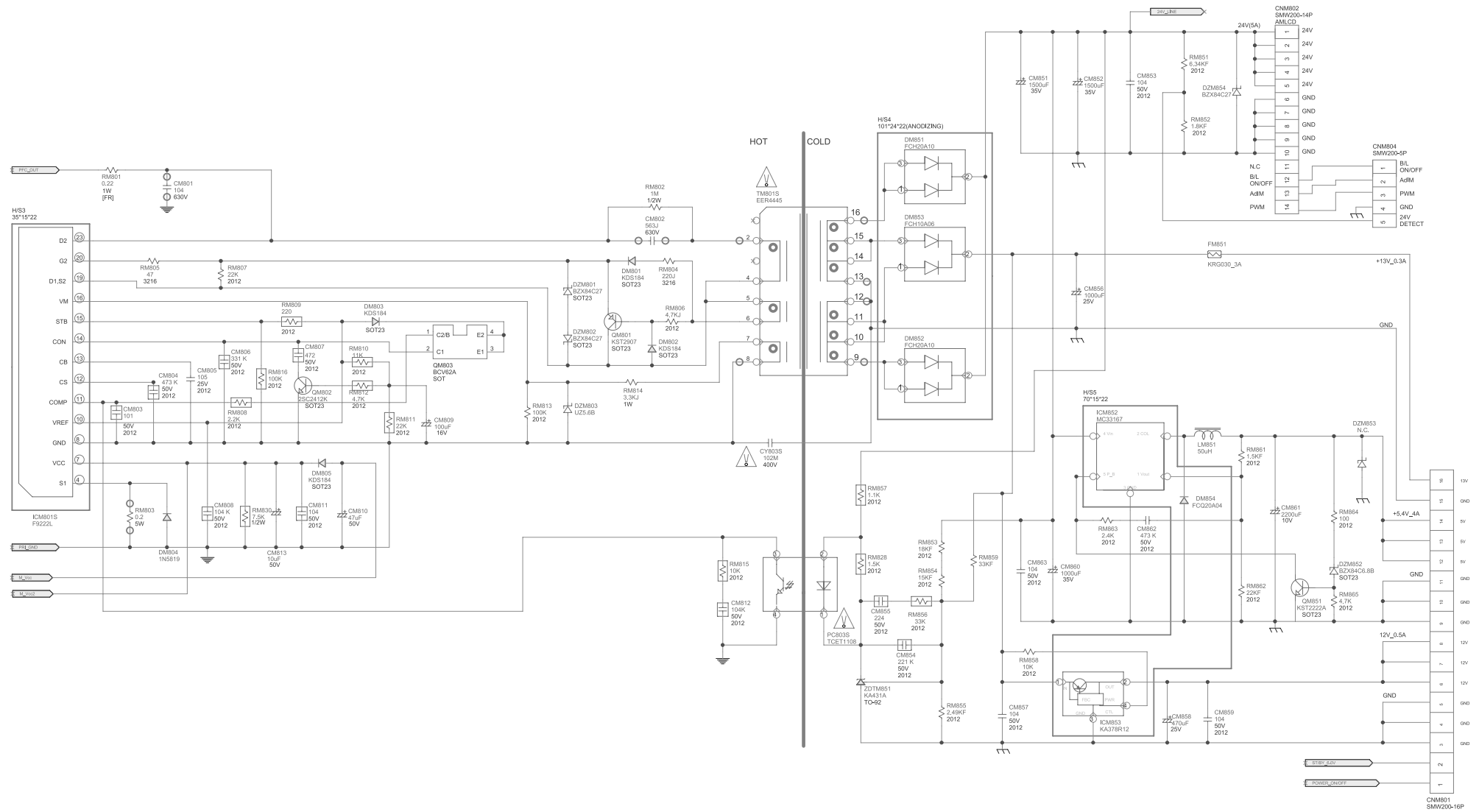


9-1-5 SMPS Schematics Diagram (1)



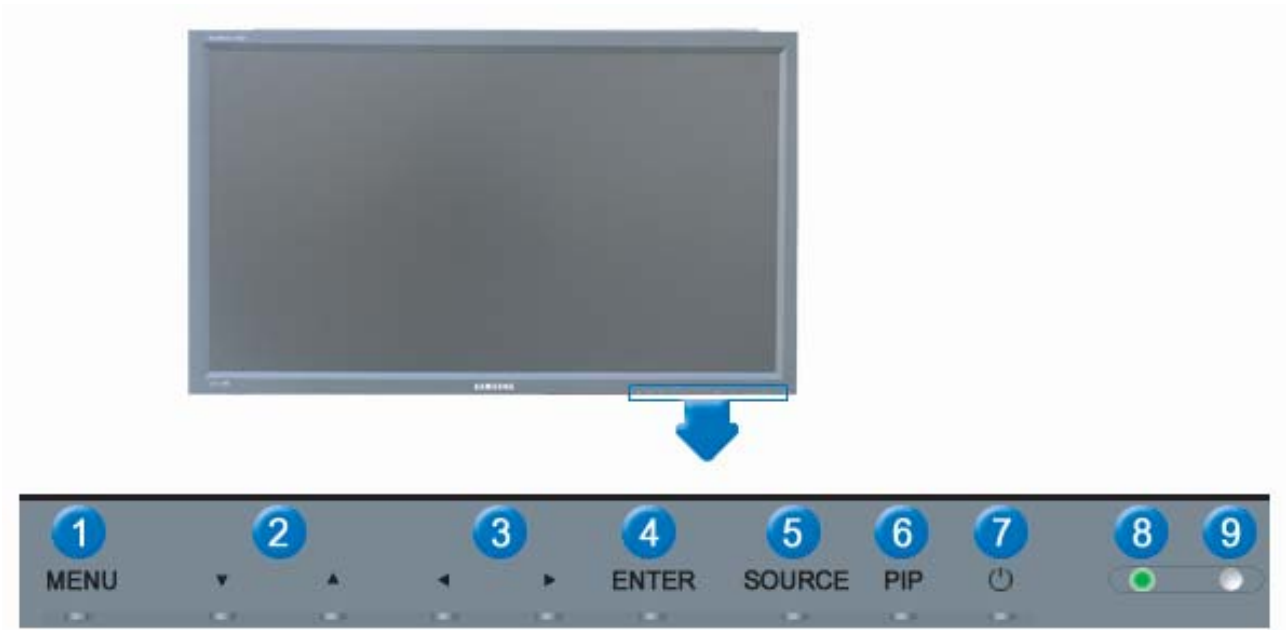
9 Schematic Diagram

9-1-6 SMPS Schematics Diagram (2)



10 Operating Instructions and Installation

10-1 Front



- | | |
|--------------------------------------|--------------------------|
| 1. MENU | 5. SOURCE |
| 2. Navigate button (Up-Down button) | 6. PIP |
| 3. Adjust button (Left-Right button) | 7. Power button |
| Volume button | 8. Power indicator |
| 4. ENTER | 9. Remote Control Sensor |

MENU:

Use this button to open or exit the OSD menu or return to the previous menu.

Up-Down:

Moves from one menu item to another vertically or adjusts selected menu values.

Left-Right:

Moves from one menu item to another horizontally or adjusts selected menu values. Also use to adjust the volume.

ENTER:

Activates a highlighted menu item.

SOURCE:

Selects the video signal. Changing the source is allowed only in devices that are connected to the monitor at the time.

* Video Signal Changing Order

[PC] [BNC] [DVI] [AV] [S-Video] [Component] [MagicNet]

PIP(Picture in Picture) :

Push the PIP button to turn PIP screen On/Off.

More than one PIP couldn't be overlapped on screen as BNC and the component use the same terminal.

- PC / DVI: AV / S-Videos / Component Mode

- BNC: AV / S-Video

- AV/ S-Video: PC / BNC / DVI Mode

- Component: PC / DVI Mode

POWER :

Use to turn the monitor on or off.

LED :

Lights up in normal mode. It blinks in green in Power Saver mode.

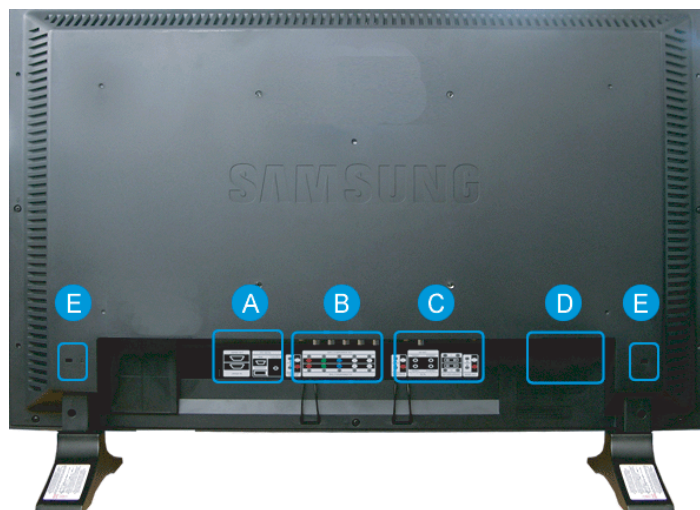
Remote Control Sensor:

Aim the remote control towards this spot on the Monitor.

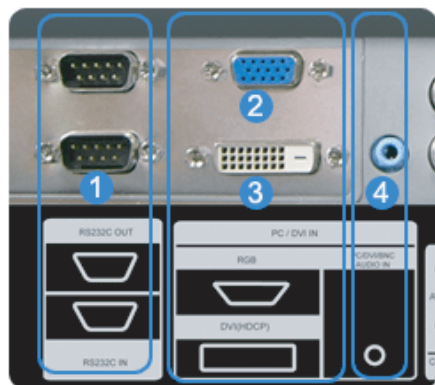
10-1-1 Rear

The monitor's rear configuration may vary slightly depending on the monitor model.

-Connection Terminal



A



1. RS232C OUT/IN (RS232C Serial Port)

: MDC(Multiple Device Control) Program Port

2. PC IN(RGB) (PC Video Connection Terminal)

: Using D-Sub (15 Pin) Cable - PC Mode (Analog PC)

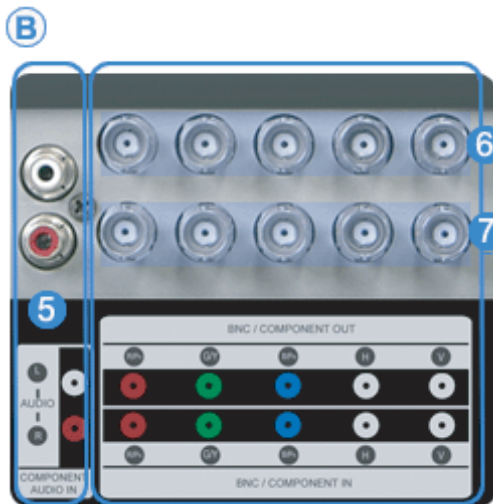
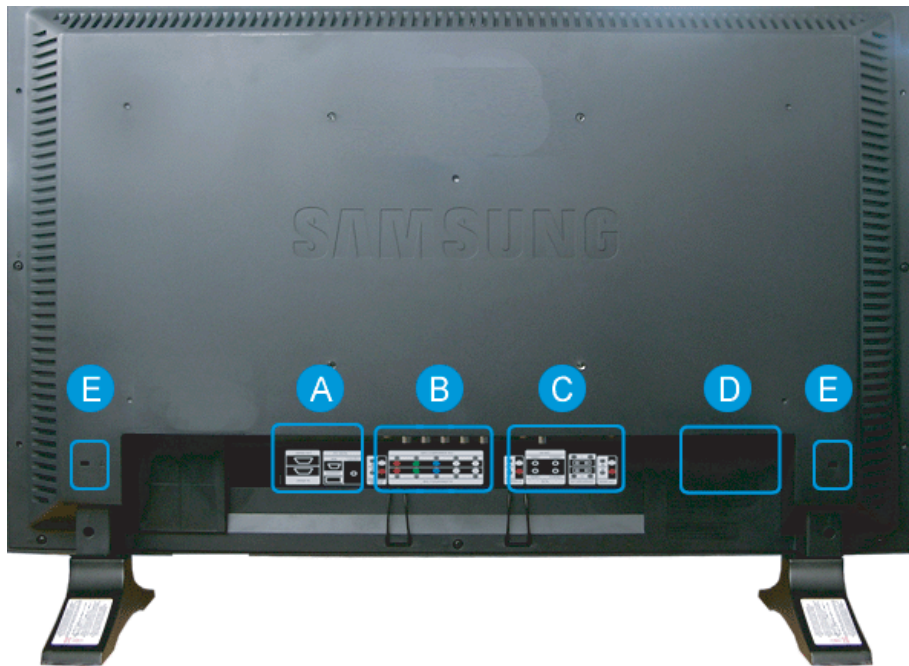
3. DVI IN(HDCP) (PC Video Connection Terminal)

: Using DVI Cable (DVI-D to DVI-D) - DVI Mode (Digital PC)

4. PC/DVI/BNC AUDIO IN

(PC/DVI/BNC Audio Connection Terminal(Input))

-Connection Terminal



5. COMPONENT AUDIO IN [L-AUDIO-R]
(Component Audio Connection Terminal (Input))

6. BNC/COMPONENT OUT
(BNC/Component Connection Terminal (Output))

- BNC (Analog PC) Connection :
connecting R, G, B, H, V port
- Component Connection :
connecting PR, Y, Pb port

7. BNC/COMPONENT IN
(BNC/Component Connection Terminal (Input))

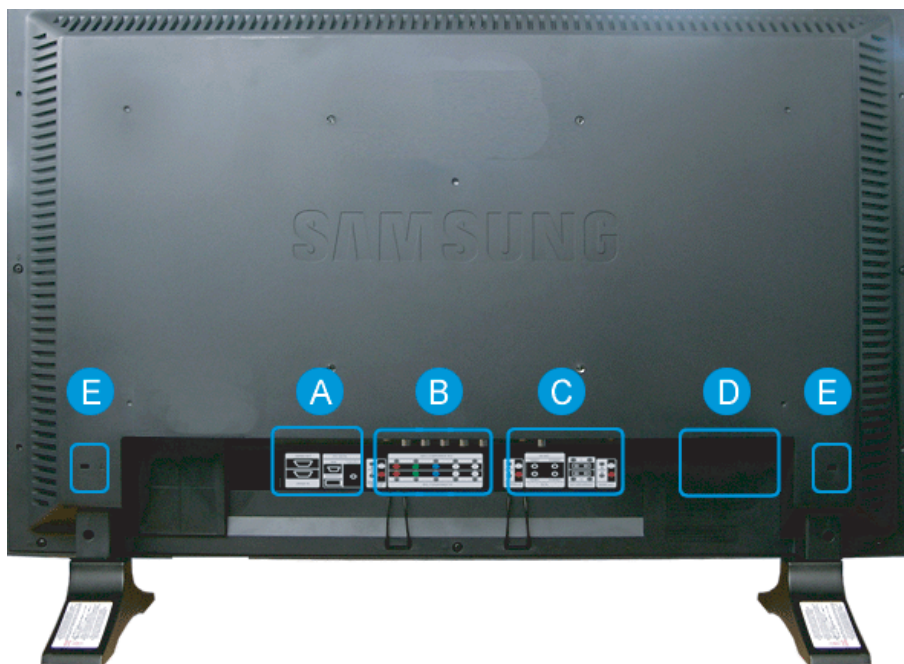


BNC

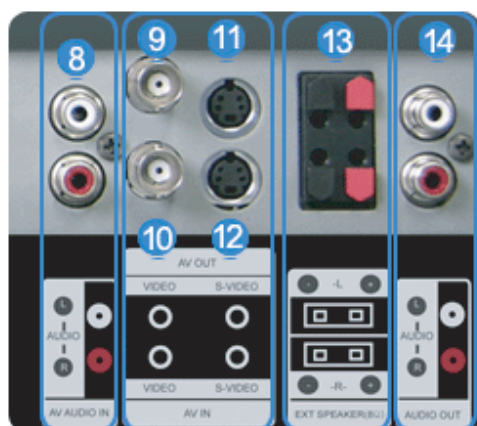


COMPONENT

-Connection Terminal



③



8. AV AUDIO IN [L-AUDIO-R]

(Monitor Audio Connection Terminal (Input))

9. AV OUT [VIDEO] (Video Connection Terminal)

: AV mode (Output)

10. AV IN [VIDEO] (Video Connection Terminal)

: AV mode (Input)

11. AV OUT [S-Video] (S-Video Connection Terminal)

: S-Video mode (Output)

12. AV IN [S-Video] (S-Video Connection Terminal)

: S-Video mode (Input)

13. EXT SPEAKER(8 Ω) (EXT Speaker Connection Terminal)

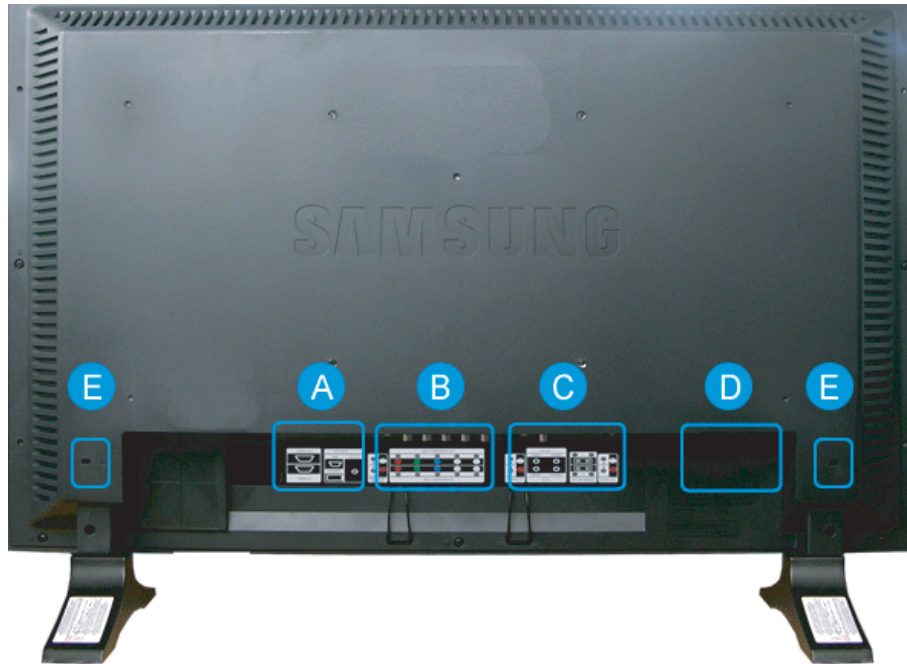
14. AUDIO OUT [L-AUDIO-R]

(Monitor Audio Connection Terminal (Output))

: MONITOR OUT is the terminal for sound output of PC, DVI or BNC



-Connection Terminal



15. POWER S/W

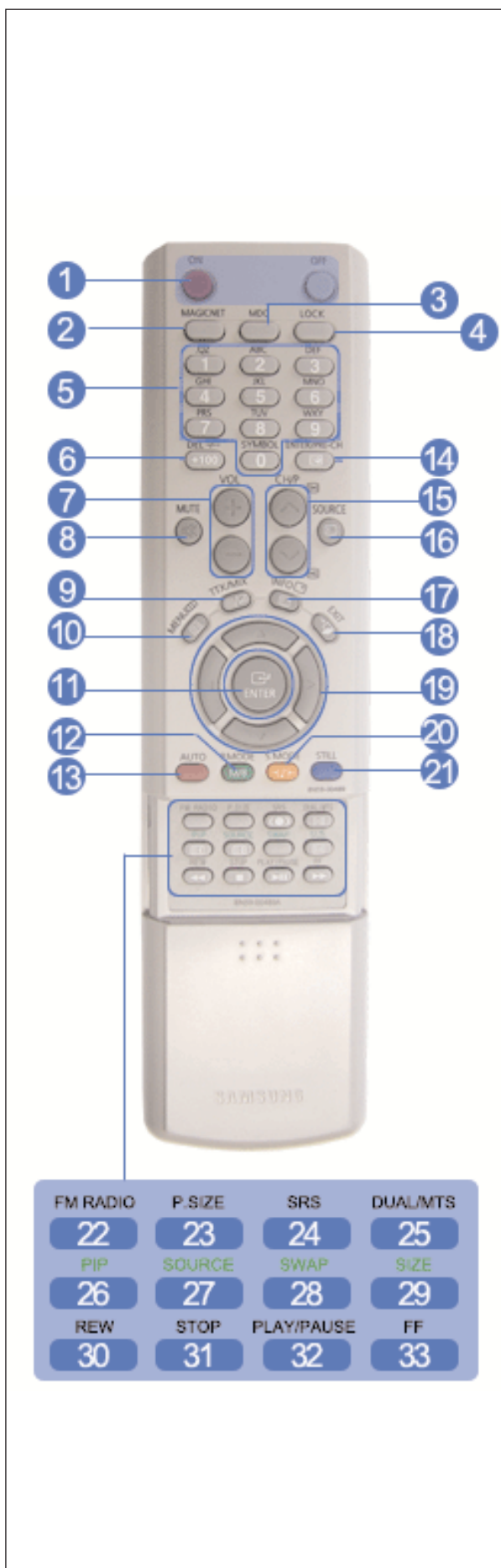
16. POWER IN



17. Kensington Lock

The Kensington lock is a device used to physically fix the system when using it in a public place.

10-1-2 Remote Control



1) ON / OFF

Use these buttons to turn the monitor on or off.

2) MAGICNET

MagicNet Quick Launch Button.

3) MDC

MDC Quick Launch Button.

4) LOCK

This button will activate or deactivate all function keys on both the remote control and the monitor except for the Power and LOCK buttons.

5) MagicNet buttons

Used for MagicNet.

- Alphanumeric: Used to enter the Internet address.
- DEL: Functions as the backspace.
- SYMBOL: Used to enter the symbols. (.O_ -:/)
- ENTER: Used to enter values.

6) +100

Press to select channels over 100.

For example, to select channel 121, press "+100", then press "2" and "1".

[This function does not work for this monitor.]

7) VOL

Adjusts the audio volume.

8) MUTE

Pauses (mutes) the audio output temporarily.

Displayed on the lower left corner of the screen.

The audio resumes if MUTE or - VOL + is pressed in the Mute mode.

9) TTX/MIX

TV channels provide written information services via teletext.

[This function is available only in Europe.]

10) MENU

Use this button to open the on-screen menu and exit from the menu screen or close screen adjustment menu.

11) ENTER

Activate a highlighted menu item.

12) P.MODE

This button is used to return to the immediately previous channel.

[This function does not work for this monitor.]

13) AUTO

Adjusts the screen display automatically.

If you change resolution in the control panel, auto function will be executed.

14) ENTER/PRE-CH

This button is used to return to the immediately previous channel.

[This function does not work for this monitor.]

15) CH/P

In TV mode, selects TV channels.

16) SOURCE

Push this button to change video sources.

17) INFO

Current picture information displays on the upper left corner of the screen.

18) EXIT

Exits from the menu screen.

19) Up-Down Left-Right buttons

Moves from one menu item to another horizontally, vertically or adjusts selected menu values.

20) S.MODE

When you press this button, current mode is displayed on the lower center of the screen. The monitor has a built-in high fidelity stereo amplifier.

Then push button again to circle through available preconfigured modes.

(Standard → Music → Movie → Speech → Custom)

21) STILL

Operates only for the CVBS, S-Video and RF Signal sources.

Press the button once to freeze the screen.

Press it again to unfreeze.

22) FM RADIO

Turns on/off FM Radio.

In PC/DVI mode, sets only SOUND to FM Radio.

In general Video SOURCE mode, sets to FM RADIO, turning off the screen.

In areas where signal is weak, noise may occur while FM radio is broadcast.

23) P.SIZE

Press to change the screen size.

24) SRS

SRS

25) DUAL/MTS

DUAL-

STEREO/MONO, DUAL I / DUAL II and MONO/NICAM MONO/NICAM STEREO can be operated depending on broadcasting type by using DUAL button on the remote control while watching TV.

MTS-

You can select the MTS (Multichannel Television Stereo) mode.

26) PIP

Every time you push the button, a PIP screen appears.

27) SOURCE

The PIP window's signal source changes.

28) SWAP

Swapping the contents of the PIP and main image.

The image in the PIP window will appear on the main screen, and the main screen image will appear in the PIP window.

29) SIZE

You can switch the Picture Size.

30) ◀◀ REW

Rewind

31) ■ STOP

Stop

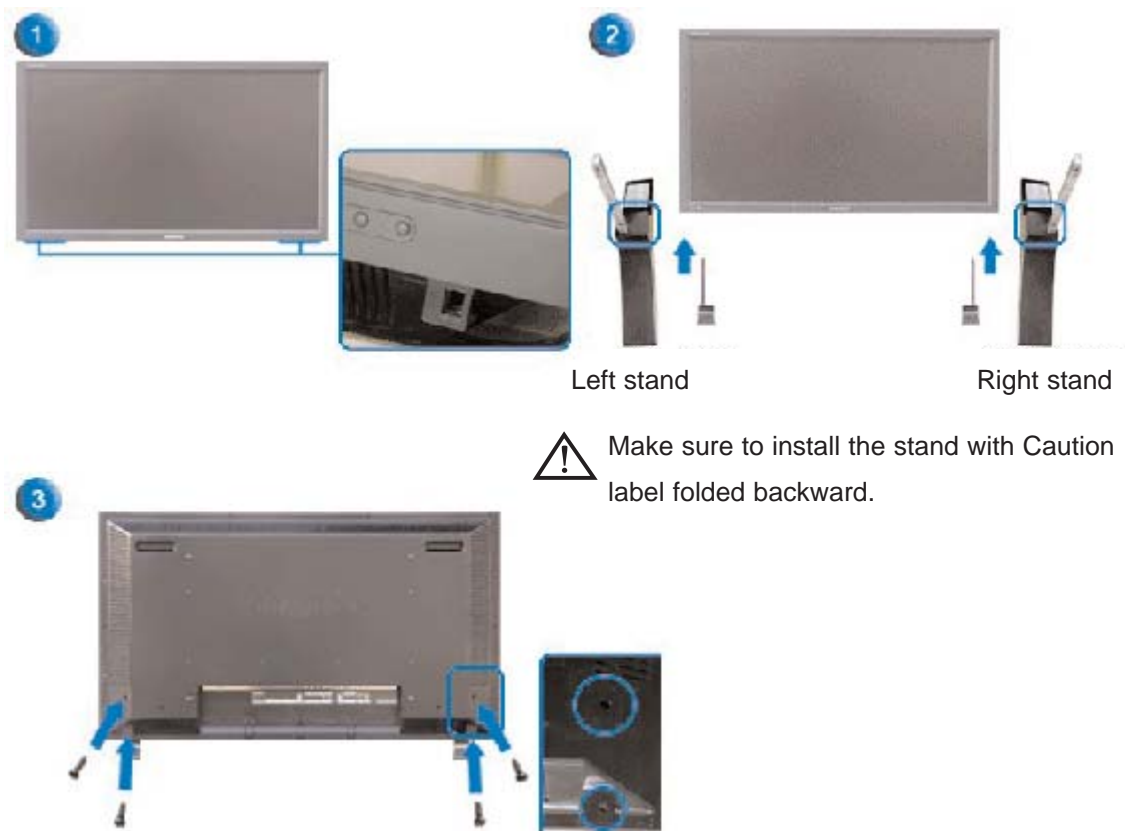
32) ▶▶ PLAY / PAUSE

Play/Pause

33) ▶▶ FF

Fast forward

10-2 Installing Stand Kit



1. A 'Cover-Protector' is used to protect the hole at the bottom of the monitor, where the stand is inserted.

Be sure to remove the 'Cover-Protector' when attaching the provided Semi Stand or stand kit (sold separately) and cover the hole using the 'Cover-Hole' when attaching the wall mount kit.

2. Set up the left and right stands respectively.

3. Put the stand into the hole at the bottom of the monitor.

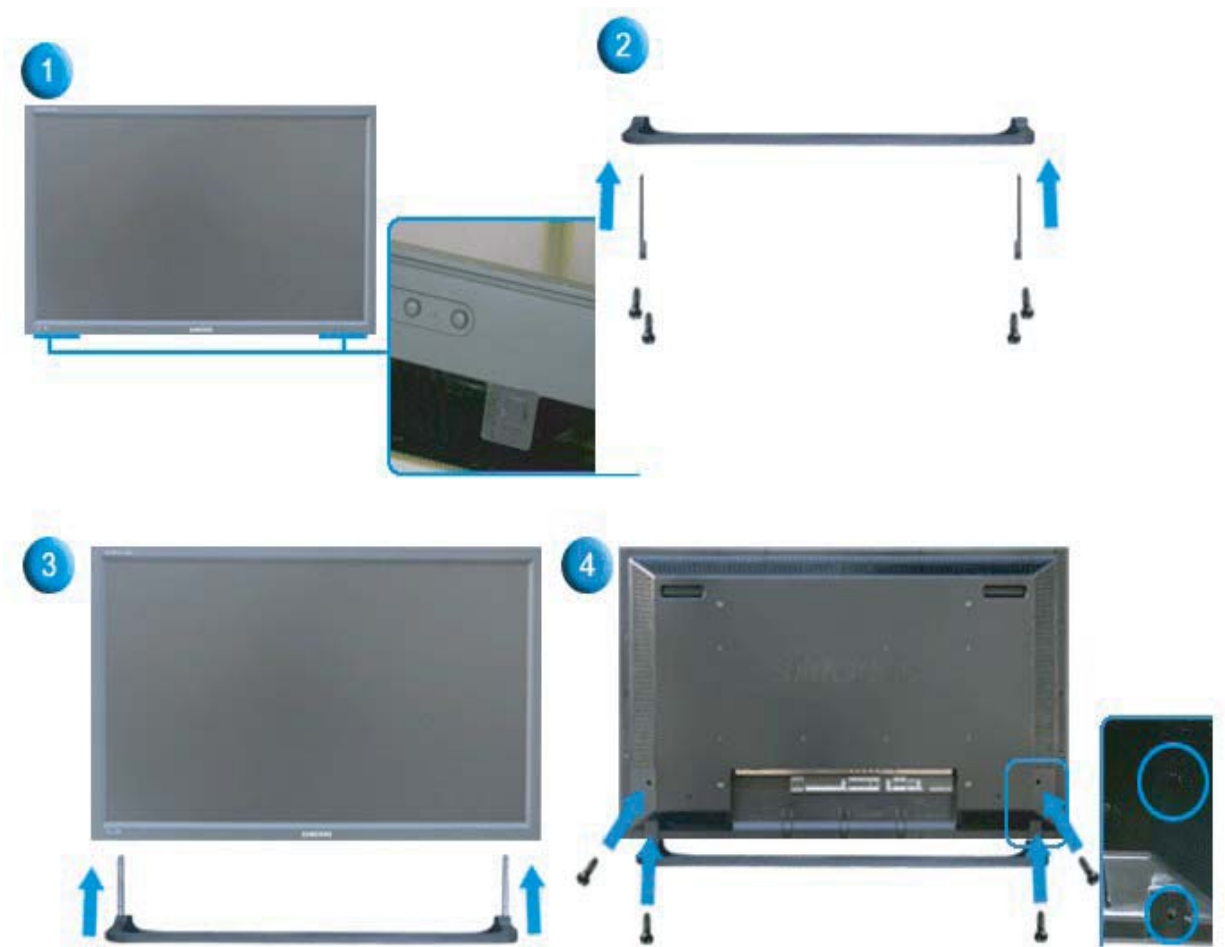
Insert screw into the hole indicated and tighten. (M4 × L15)



Make sure to use the semi stand only for adjusting the screen.

The company is not responsible for the damage caused by using them with other purpose.

10-2-1 Installing Stand Kit (sold separately)



1. A 'Cover-Protector' is used to protect the hole at the bottom of the monitor, where the stand is inserted. Be sure to remove the 'Cover-Protector' when attaching the provided Semi Stand or stand kit (sold separately) and cover the hole using the 'Cover-Hole' when attaching the wall mount kit.
2. Make sure you put the parts in the right direction and in the right place. (M4 × L15)
3. Put the stand into the hole at the bottom of the monitor.
4. Insert screw into the hole indicated and tighten. (M4 × L15)

Memo



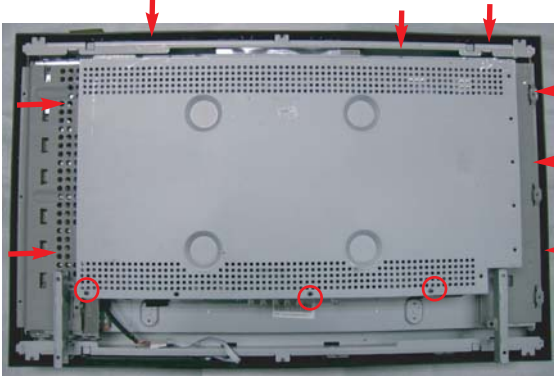
11 Disassembly and Reassembly

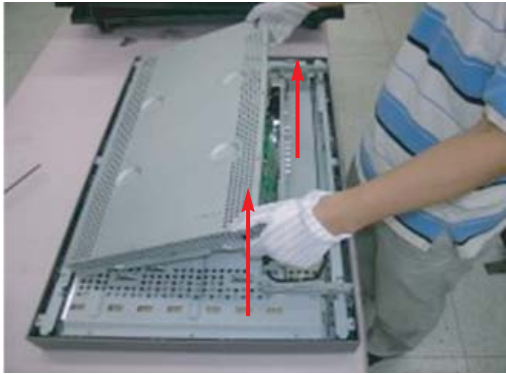
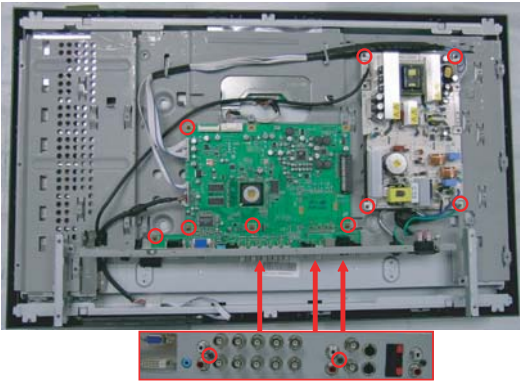
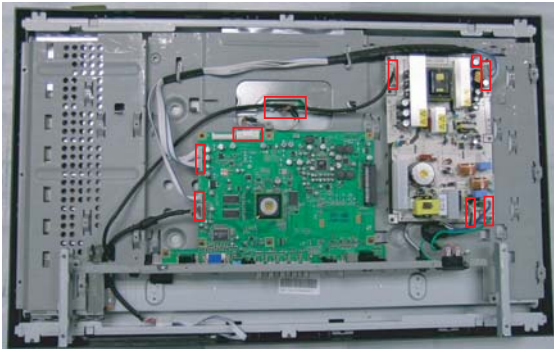
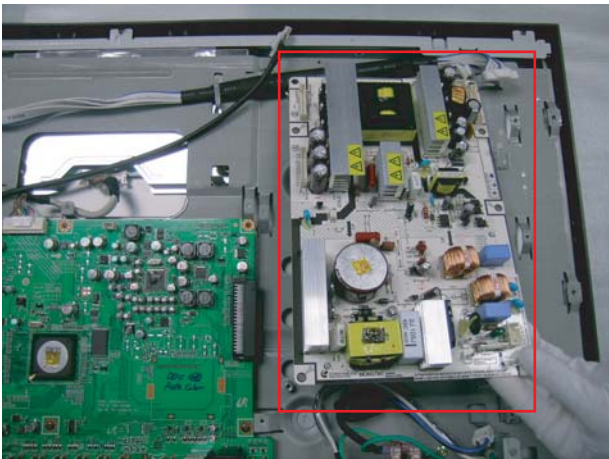
This section of the service manual describes the disassembly and reassembly procedures for the BE40TS LCD monitor.

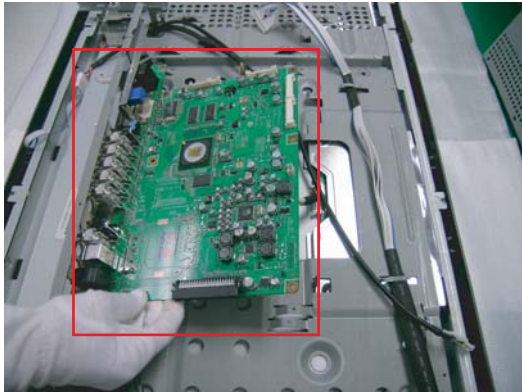
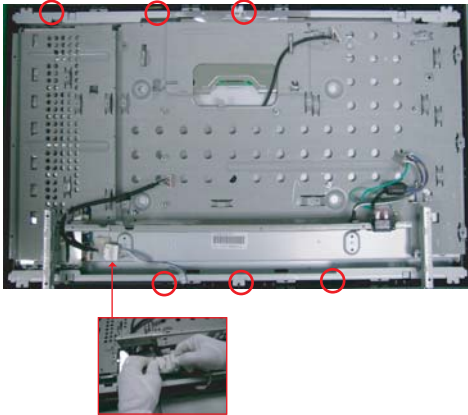


⚠ WARNING: This monitor contains electrostatically sensitive devices. Use caution when handling these components.

11-1 Disassembly

- ⚠ Cautions:**
- 1. Disconnect the monitor from the power source before disassembly.**
 - 2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.**

Description	Picture Description
1. Place monitor face down on cushioned table. Remove 8 screws from the rear cover. Lift up the rear cover.	
	
	2. Remove 11 screws from the shield and lift up the shield.
	

Description	Picture Description
<p data-bbox="164 696 756 763">3. Remove the screws and cables as showed the picture.</p> <p data-bbox="164 1543 770 1612">4. Separate the SMPS board and main board from bottom BRKT as showed the picture.</p> <p data-bbox="164 1662 703 1731">(When changing panel only, not necessary to separate boards but remove BRKT entirely.)</p>	
	
	
	

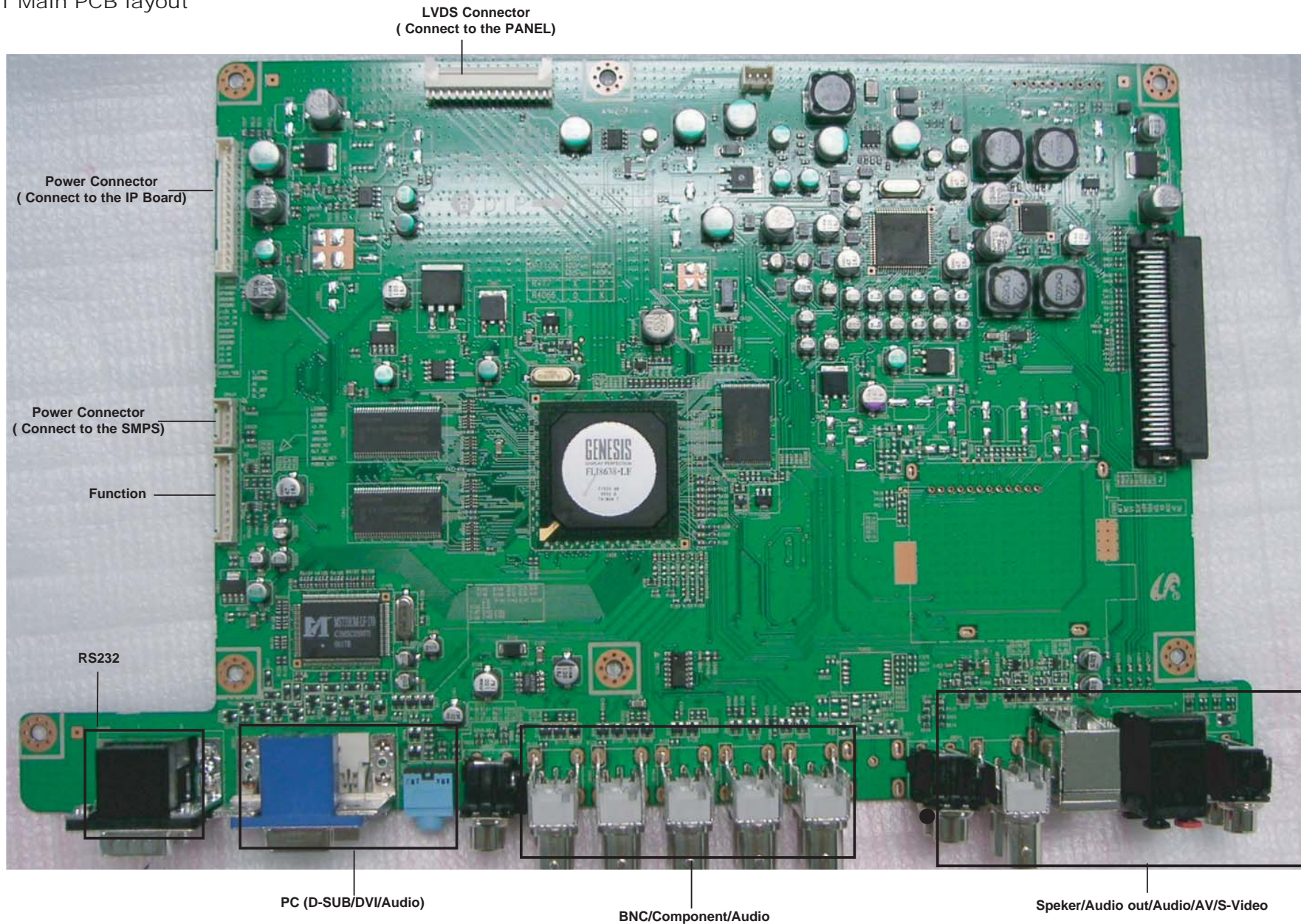
Description	Picture Description
<p>5. Remove the screws between side BRKT and front cabinet, disconnect the cable of function PCB as showed left picture, and lift up the panel.</p> <p>6. Remove 4 screws (left-2, right-2) from side BRKT, and lift up BRKT.</p> <p>7. Remove the screws from side BRKT (top-2, bottom-2), and separate panel and BRKTs.</p>	
	
	
	

11-2 Reassembly

Reassembly procedures are in the reverse order of disassembly procedures.

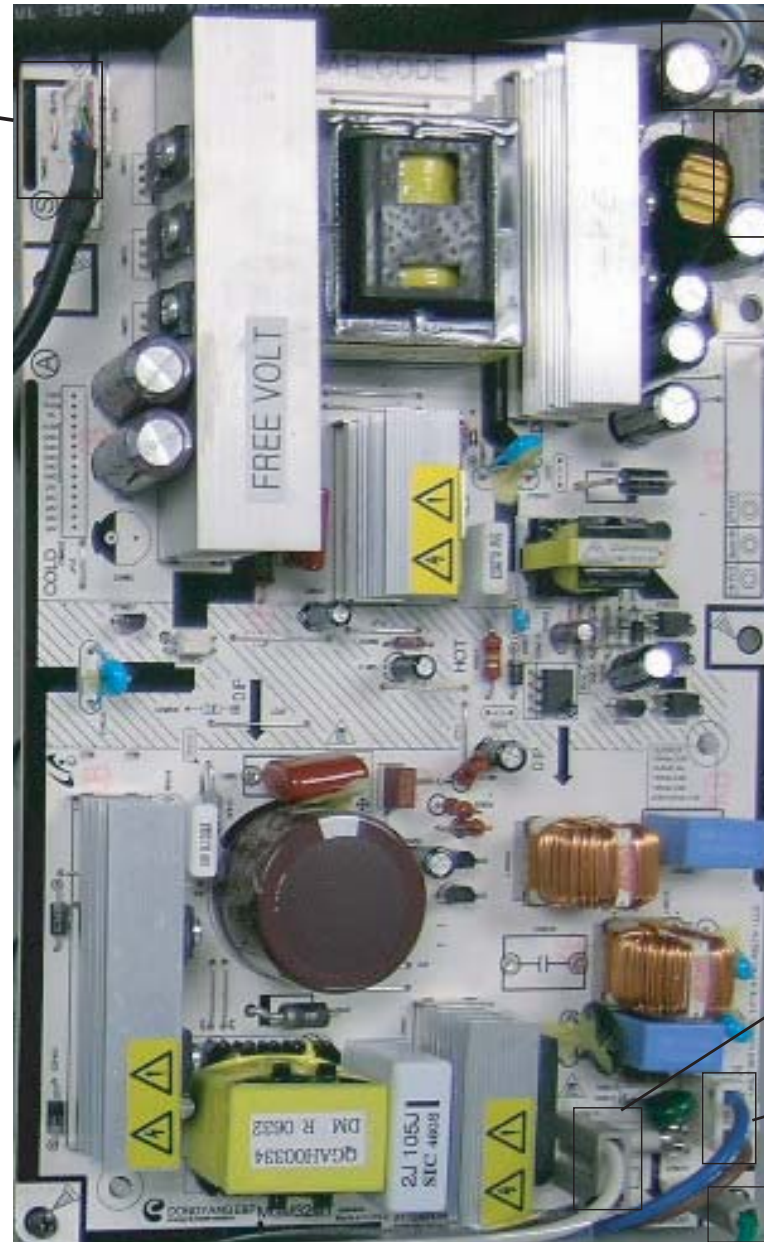
12 PCB layout

12-1 Main PCB layout



12-2 SMPS Board layout

Lamp Connector
(Connecting to panel inverter
- upper/left side)



Power Connector
(Connecting to MAIN board,
Relation to Lamp control)

Power Connector
(Connecting to MAIN board)

Connecting to Mechanical switch

Connecting to
AC socket

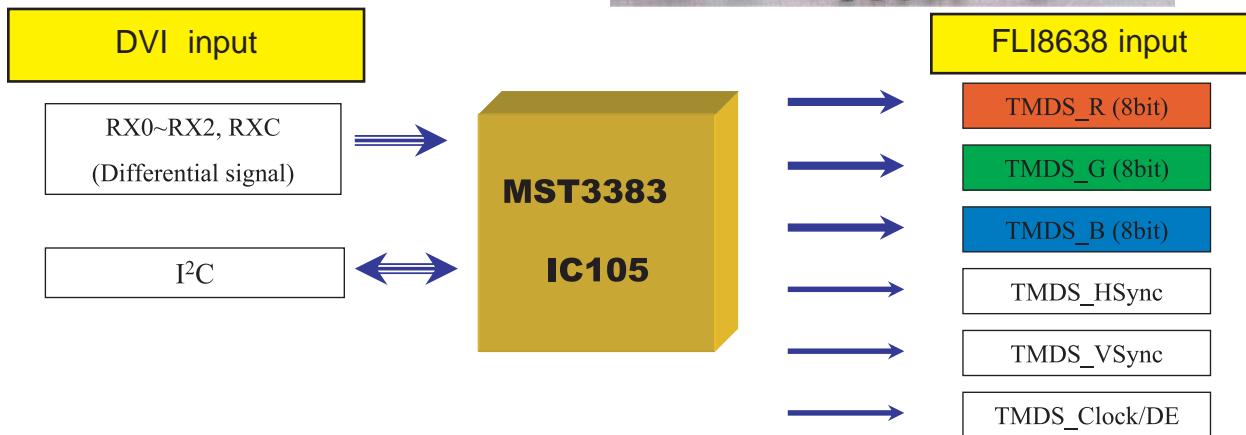
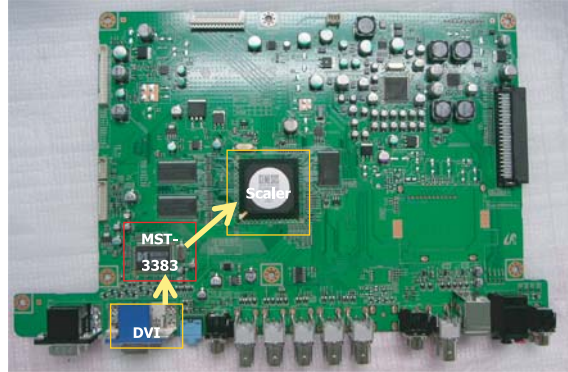
Power GND

13 Circuit Descriptions

13-1 Main board part

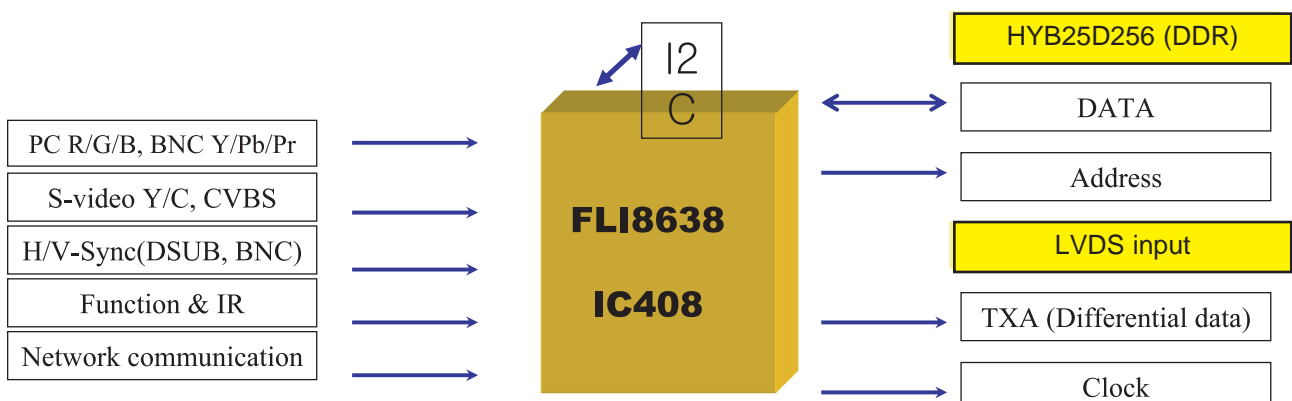
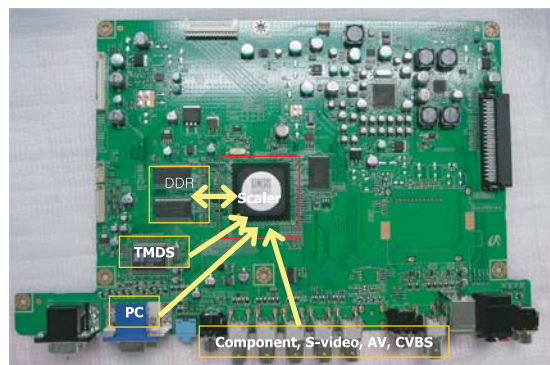
13-1-1 MST3383

- TMDS Receiver
- Convert the DVI input to the TMDS signal and send to the scaler.



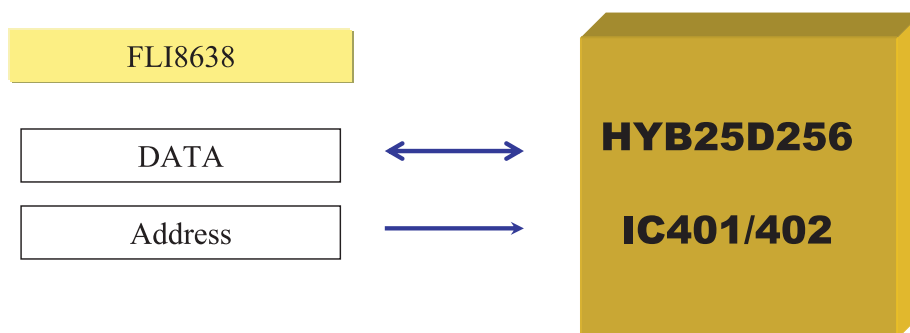
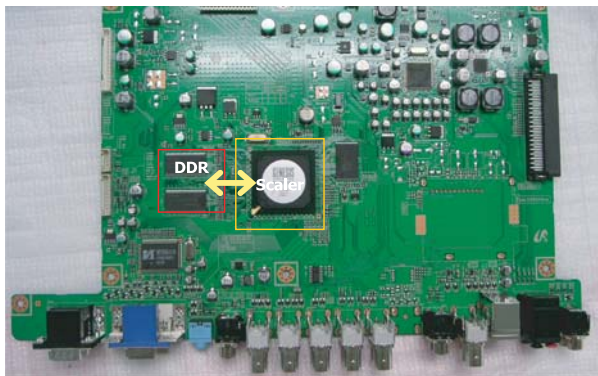
13-1-2 FLI8638

- GENESIS Company Scaler IC
- Video decoder, micom, Image enhancer, 3-D Comb filter functions embedded
- Supports OSD and PIP



13-1-3 HYB25D256

- 256M DDR Memory

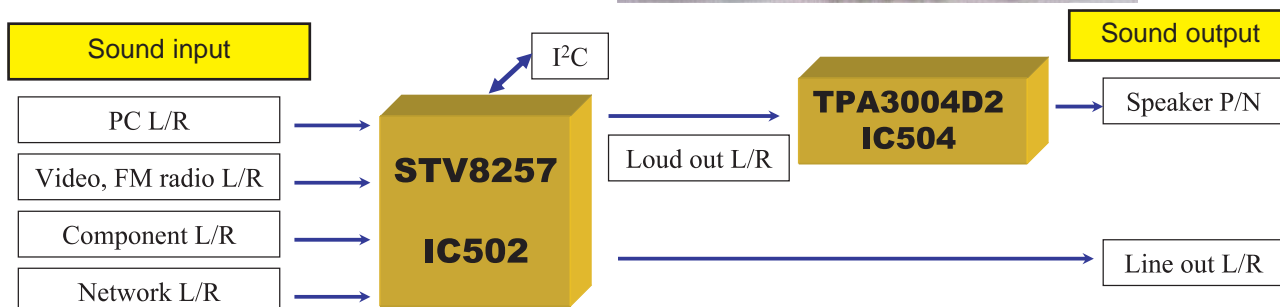
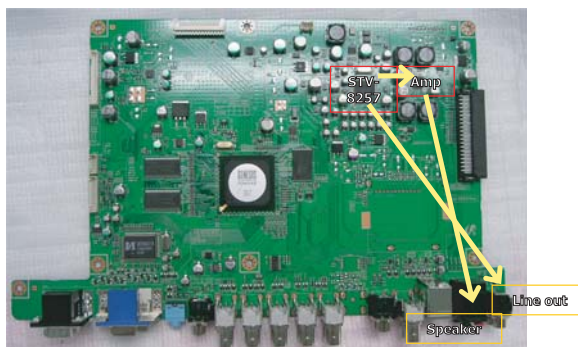


13-1-4 STV8257

- Sound Processor
- Supports the SRS Trusurround
- Lip Sync. function

13-1-5 TPA3004D2

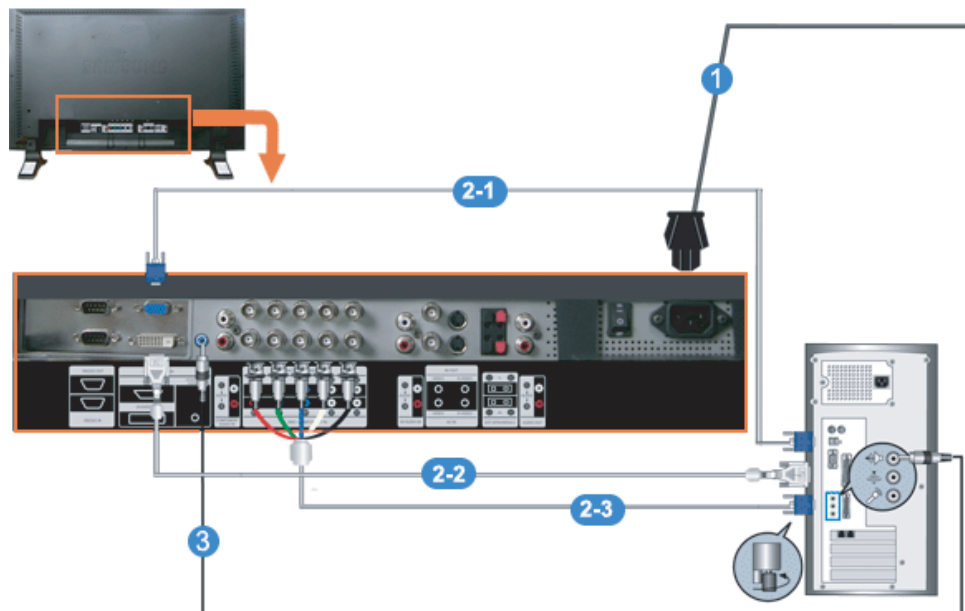
- Sound Amp.
- Receive the signal from the Sound Processor and amplify, then send to the speaker.



14 Reference Information

14-1 Set UP

14-1-1 Connecting to a Computer



1. Connect the Power cord to 220V or 110V outlet.
2. There are 3 ways to connect the signal cable to your monitor.

Choose one of the followings:

2-1.Using the D-sub (Analog) connector on the video card.

- Connect the D-SUB port of the monitor and computer with the D-SUB cable.

2-2.Using the DVI (Digital) connector on the video card.

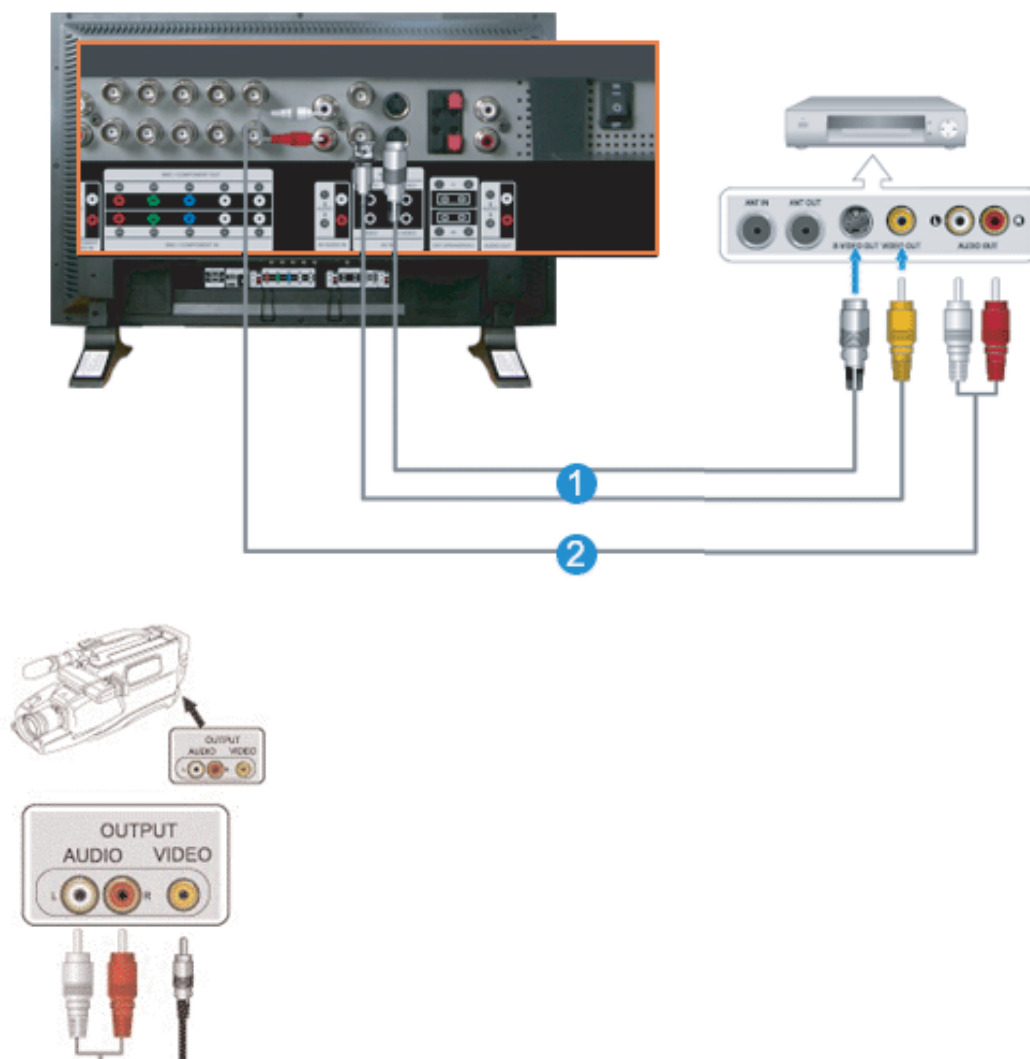
- Connect the DVI port of the monitor and computer with the D-SUB cable.

2-3.Using the BNC(Analog) connector on the video card.

- Connect the BNC cable to BNC/COMPONENT IN - R, G, B, H, and V port on the back of your monitor and the D-SUB port on the computer.

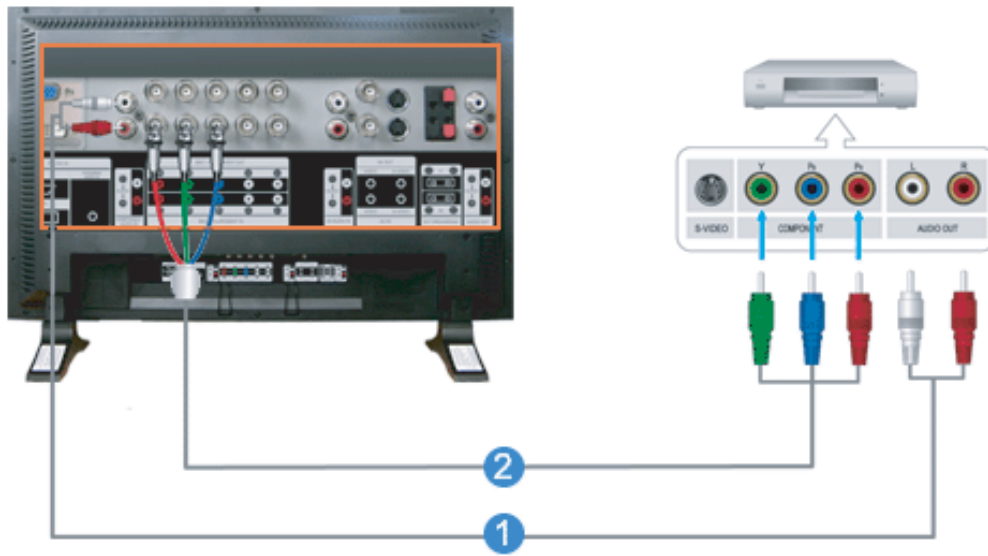
3. Connect the audio cable to the audio card speaker output port on the monitor and computer.
4. Turn on both your computer and the monitor.

14-1-2 Connecting to VCR



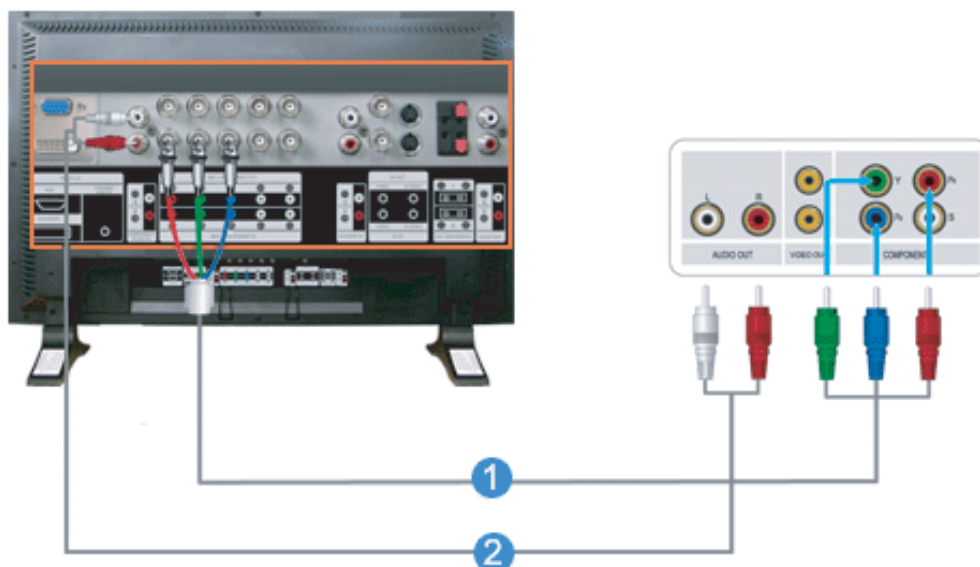
1. AV input devices like VCRs or Camcorders are connected to the AV IN [VIDEO] or AV IN [S-VIDEO] of the monitor using the S-VHS or BNC cable.
2. Connect the Audio (L) and Audio (R) terminals of a VCR or Camcorders to the monitor's AV IN [L-AUDIO-R] using audio cables.
3. Select AV or S-Video that is connected to a VCR or Camcorders using the Source button on the monitor's front or remote control.
4. Then, start the VCR or Camcorders with a tape inserted.

14-1-3 Connecting to VCR



1. Connect a set of audio cables between the COMPONENT AUDIO IN [L-AUDIO-R] on the Monitor and the AUDIO OUT jacks on the DVD player.
2. Connect a Component cable between the BNC/COMPONENT IN - Pr, Y, Pb port on the Monitor and the PR, Y, PB jacks on the DVD player.
3. Select Component that is connected to a DVD player using the Source button on the monitor's front or remote control.
4. Then, start the DVD Player with a DVD disc inserted.

14-1-4 Connecting to DTV Set Top Box



1. Connect a set of audio cables between the COMPONENT AUDIO IN [L-AUDIO-R] on the LCD Display and the AUDIO OUT jacks on the Set Top Box.
2. Connect a Component cable between the BNC / COMPONENT IN -Pr, Y, Pb port on the LCD Display and the Pr, Y, Pb jacks on the Set Top Box.
3. Select Component for the connection to a DTV Set Top Box using the Source button on the front of the LCD Display or on the remote control.

- When connecting component of DVD or STB terminal, Y, Pb, Pr color must be distinguished for normal color to appear.
- DVD or STB terminal also has separate input and output, so output terminal must be connected to monitor.
- Set terminals must be connected with clear distinction of input and output.

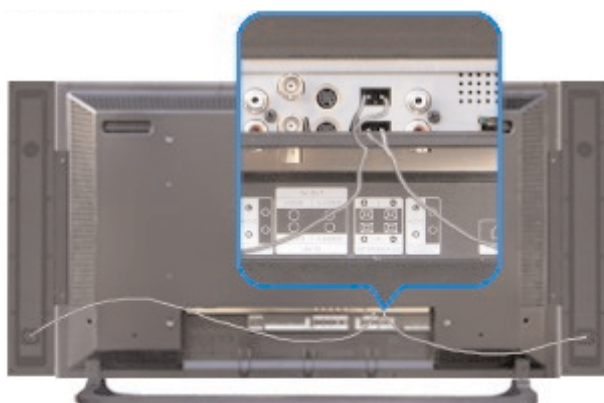
14-1-5 Connecting Speakers

1. Tight the speakers to the set using the screws.



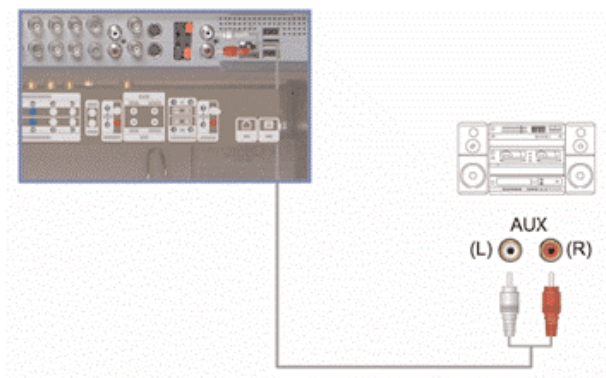
* Mount the speakers to the set without speaker stands.

2. Connect speaker cables between the speaker connectors on the rear of the set and to the connectors on the rear of the speakers.



Don't attempt to move the set while grabbing onto the speakers. This may damage the speaker brackets.

14-1-6 Connecting to an Audio System



1. Connect a set of audio cables between the AUX L, R jacks on the AUDIO SYSTEM and the MONITOR OUT [L-AUDIO-R] on the Monitor.

14-2 Terms

Dot Pitch

The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

Vertical Frequency

The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit : Hz

Ex) If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit : kHz

Interlace and Non-Interlace Methods

Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as the used TVs.

Plug & Play

This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

Sync Signal

Sync (Synchronized) Signals refer to the standard signals that are required to display desired colors on the monitor. They are divided into Vertical and Horizontal Sync Signals. These signals display normal color images by the set resolution and frequency.

Types of Sync Signals

- Separate : This is a scheme of transmitting individual vertical sync signals to the monitor.
- Composite : This is a scheme of combining vertical sync signals into one composite signal and transmitting it to the monitor. The monitor displays the color signals by separating the composite signal into original color signals.

Resolution

The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

Example: If the resolution is 1360 X 768 , this means the screen is composed of 1360 horizontal dots (horizontal resolution) and 768 vertical lines (vertical resolution).

Multiple Display Control (MDC)

A Multiple Display Control (MDC) is an application allowing various displays to be easily and simultaneously operated on a PC. RS-232C, a standard of serial communication, is used for the communication between a PC and a display.

Cable TV

As opposed to the traditional television broadcasting via radio waves such as KBS, MBC, and SBS, the cable is required to get Cable TV services. Purchase the Cable TV receiver to watch Cable TV.

A2

This method uses 2 carriers to transfer multi signals and Korea and Germany use this method,

BTSC(Broadcast Television System Committee)

The stereo method applied to the most of the countries using NTSC format including US, Canada, Chile, Venezuela, and Taiwan or the committee regarding this method

EIAJ

Electronic Industries Association of Japan

Satellite Broadcasting

The artificial satellite helps to view high quality picture without any trouble in receiving signals in any region.

Sound Balance

This function allows you to adjust the sound balance between the left and right speakers.

Multi-sound broadcasting

Korean and other foreign languages are supported and the stereo music is available.

Input Source

It means that there are other sources like video, camcorder, and DVD beside TV broadcasting input

English Caption (= Caption setting)

It supports captions or text information service using a broadcasting station or video tape. You can study English with AFN channels or a video tape with the CC mark on it.

Wire Broadcasting

This is the broadcasting supports movie, entertainment, and various kinds of cultural programs that are on air via the self-operating broadcasting station of hotel, school, or building besides VHF and UHF of the main broadcasting stations. (differ from Cable TV)

This is the system started before March 1995.

This is restricted within the area supporting Wire Broadcasting.

14-3 Timing Chart

The timing no. is standardized by Samsung to apply the same signal to all monitors manufactured by Samsung.

14-3-1 LCD Panel Mode1 mode

* N/I : Non-Interlaced, I : Interlaced

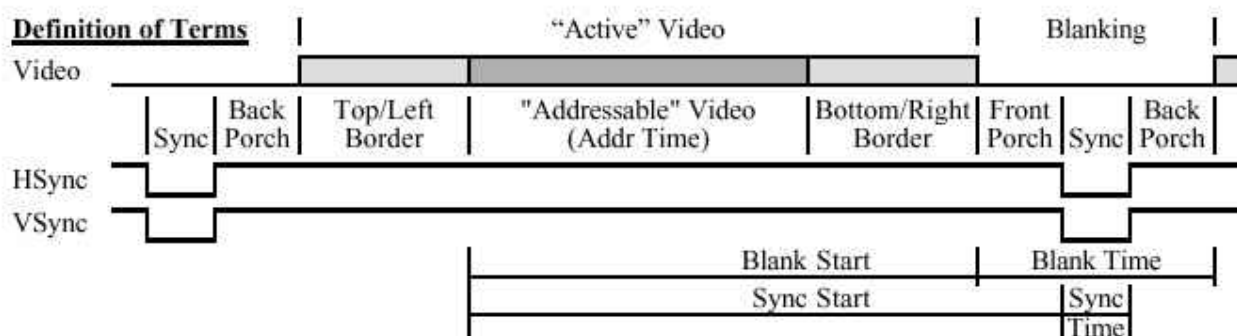
Originator Mode Name Resolution (HxV)	VESA 1360/60Hz 1360x768			
HORIZONTAL Frequency Total time Active time Blank time Border (L / R) Data time Front porch Sync. width Back porch Sync. polarity	47.712kHz 20.959 μ S 15.973 μ S 5.053 μ S 0.000 μ S 15.906 μ S 0.749 μ S 1.310 μ S 2.994 μ S Positive	blank	blank	blank
VERTICAL Frequency Total time Active time Blank time Border (T / B) Data time Front porch Sync. width Back porch Sync. polarity	60Hz 16.662ms 16.097ms 0.566ms 0.000ms 16.159ms 0.063ms 0.126ms 0.377ms Positive	blank	blank	blank
Dot Clock	85.500MHz			
Sync. Type	Separate			
Scan Type*	N/I			

14-3-2 Supported Modes (1)

Originator Mode Name Resolution (HxV)	IBM VGA1 640x350	IBM VGA2 720x400	IBM VGA3 640x480	VESA 640/72Hz 640x480	VESA 640/75Hz 640x480
HORIZONTAL					
Frequency	31.469kHz	31.469kHz	31.469kHz	37.861kHz	37.500kHz
Total time	31.778 μ S	31.777 μ S	31.778 μ S	26.413 μ S	26.667 μ S
Active time	26.058 μ S	26.058 μ S	26.058 μ S	20.825 μ S	20.317 μ S
Blank time	5.720 μ S	5.720 μ S	5.720 μ S	5.588 μ S	6.350 μ S
Border (L / R)	0.318 μ S	0.318 μ S	0.318 μ S	0.254 μ S	0.000 μ S
Data time	25.422 μ S	25.422 μ S	25.422 μ S	20.317 μ S	20.317 μ S
Front porch	0.318 μ S	0.318 μ S	0.318 μ S	0.508 μ S	0.508 μ S
Sync. width	3.813 μ S	3.813 μ S	3.813 μ S	1.270 μ S	2.032 μ S
Back porch	1.589 μ S	1.589 μ S	1.589 μ S	3.810 μ S	3.810 μ S
Sync. polarity	Positive	Negative	Negative	Negative	Negative
VERTICAL					
Frequency	70.086Hz	70.087Hz	59.940Hz	72.809Hz	75.000Hz
Total time	14.268ms	14.268ms	16.683ms	13.735ms	13.333ms
Active time	11.504ms	13.155ms	15.761ms	13.100ms	12.800ms
Blank time	2.764ms	1.113ms	0.922ms	0.635ms	0.533ms
Border (T / B)	0.191ms	0.222ms	0.254ms	0.211ms	0.000ms
Data time	11.122ms	12.711ms	15.253ms	12.678ms	12.800ms
Front porch	0.985ms	0.191ms	0.064ms	0.026ms	0.027ms
Sync. width	0.064ms	0.064ms	0.064ms	0.079ms	0.080ms
Back porch	1.716ms	0.858ms	0.794ms	0.528ms	0.427ms
Sync. polarity	Negative	Positive	Negative	Negative	Negative
Dot Clock	25.175MHz	28.322MHz	25.175MHz	31.500MHz	31.500MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type*	N/I	N/I	N/I	N/I	N/I

14-3-3 Supported Modes (2)

Originator Mode Name Resolution (HxV)	VESA 640/85Hz 640x480	MAC 640/67Hz 640x480	VESA 800/56Hz 800x600	VESA 800/60Hz 800x600	VESA 800/72Hz 800x600
HORIZONTAL					
Frequency	43.269kHz	35.000kHz	35.156kHz	37.879kHz	48.077kHz
Total time	23.111 μ s	28.571 μ s	28.444 μ s	26.400 μ s	20.800 μ s
Active time	17.778 μ s	21.164 μ s	22.222 μ s	20.000 μ s	16.000 μ s
Blank time	5.333 μ s	7.407 μ s	6.222 μ s	6.400 μ s	4.800 μ s
Border (L / R)	0.000 μ s	0.000 μ s	0.000 μ s	0.000 μ s	0.000 μ s
Data time	17.778 μ s	21.164 μ s	22.222 μ s	20.000 μ s	16.000 μ s
Front porch	1.556 μ s	2.116 μ s	0.667 μ s	1.000 μ s	1.120 μ s
Sync. width	1.556 μ s	2.116 μ s	2.000 μ s	3.200 μ s	2.400 μ s
Back porch	2.222 μ s	3.175 μ s	3.556 μ s	2.200 μ s	1.280 μ s
Sync. polarity	Negative	Negative	Positive or Negative	Positive	Positive
VERTICAL					
Frequency	85.008Hz	66.667Hz	56.250Hz	60.317Hz	72.188Hz
Total time	11.764ms	15.000ms	17.778ms	16.579ms	13.853ms
Active time	11.093ms	13.714ms	17.067ms	15.840ms	12.480ms
Blank time	0.671ms	1.286ms	0.711ms	0.739ms	1.373ms
Border (T / B)	0.000ms	0.000ms	0.000ms	0.000ms	0.000ms
Data time	11.093ms	13.714ms	17.067ms	15.840ms	12.480ms
Front porch	0.023ms	0.086ms	0.028ms	0.026ms	0.770ms
Sync. width	0.069ms	0.086ms	0.057ms	0.106ms	0.125ms
Back porch	0.578ms	1.114ms	0.626ms	0.607ms	0.478ms
Sync. polarity	Negative	Negative	Positive or Negative	Positive	Positive
Dot Clock	36.000MHz	30.240MHz	36.000MHz	40.000MHz	50.000MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I	N/I



14-3-4 Supported Modes (3)

Originator Mode Name Resolution (HxV)	VESA 800/75Hz 800x600	VESA 800/85Hz 800x600	MAC 832/75Hz 832x624	VESA 1024/60Hz 1024x768	VESA 1024/70Hz 1024x768
HORIZONTAL					
Frequency	46.875kHz	53.674kHz	49.726kHz	48.363kHz	56.476kHz
Total time	21.333 μ S	18.631 μ S	20.110 μ S	20.677 μ S	17.707 μ S
Active time	16.162 μ S	14.222 μ S	14.524 μ S	15.754 μ S	13.653 μ S
Blank time	5.171 μ S	4.409 μ S	5.171 μ S	4.923 μ S	4.053 μ S
Border (L / R)	0.000 μ S	0.000 μ S	0.000 μ S	0.000 μ S	0.000 μ S
Data time	16.162 μ S	14.222 μ S	14.524 μ S	15.754 μ S	13.653 μ S
Front porch	0.323 μ S	0.569 μ S	0.559 μ S	0.369 μ S	0.320 μ S
Sync. width	1.616 μ S	1.138 μ S	1.117 μ S	2.092 μ S	1.813 μ S
Back porch	3.232 μ S	2.702 μ S	3.910 μ S	2.462 μ S	1.920 μ S
Sync. polarity	Positive	Positive	Positive	Negative	Negative
VERTICAL					
Frequency	75.000Hz	85.000Hz	74.551Hz	60.004Hz	70.069Hz
Total time	13.333ms	11.756ms	13.414ms	16.666ms	14.272ms
Active time	12.800ms	11.179ms	12.549ms	15.880ms	13.599ms
Blank time	0.533ms	0.577ms	0.864ms	0.786ms	0.672ms
Border (T / B)	0.000ms	0.000ms	0.000ms	0.000ms	0.000ms
Data time	12.800ms	11.179ms	12.549ms	15.880ms	13.599ms
Front porch	0.021ms	0.019ms	0.020ms	0.062ms	0.053ms
Sync. width	0.064ms	0.056ms	0.060ms	0.124ms	0.106ms
Back porch	0.448ms	0.503ms	0.784ms	0.600ms	0.513ms
Sync. polarity	Positive	Positive	Positive	Negative	Negative
Dot Clock	49.500MHz	56.250MHz	49.500MHz	65.000MHz	75.000MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type*	N/I	N/I	N/I	N/I	N/I

14-3-5 Supported Modes (4)

Originator Mode Name Resolution (HxV)	VESA 1024/75Hz 1024x768	VESA 1024/85Hz 1024x768	VESA 1280/60Hz 1280x1024 (Reduced Blanking Timing)	
HORIZONTAL Frequency Total time Active time Blank time Border (L / R) Data time Front porch Sync. width Back porch Sync. polarity	60.023kHz 16.660 μ S 13.003 μ S 3.777 μ S 0.000 μ S 13.003 μ S 0.323 μ S 1.219 μ S 2.235 μ S Positive	68.677kHz 14.561 μ S 10.836 μ S 3.725 μ S 0.000 μ S 10.836 μ S 0.508 μ S 1.016 μ S 2.201 μ S Positive	63.194kHz 15.824 μ S 14.066 μ S 1.758 μ S 0.000 μ S 14.066 μ S 0.527 μ S 0.352 μ S 0.879 μ S Positive	
VERTICAL Frequency Total time Active time Blank time Border (T / B) Data time Front porch Sync. width Back porch Sync. polarity	75.029Hz 13.328ms 12.795ms 0.533ms 0.000ms 12.795ms 0.017ms 0.050ms 0.466ms Positive	85.997Hz 11.765ms 11.183ms 0.582ms 0.000ms 11.183ms 0.015ms 0.044ms 0.524ms Positive	59.957Hz 16.679ms 16.204ms 0.475ms 0.000ms 16.204ms 0.032ms 0.111ms 0.332ms Negative	
Dot Clock	78.750MHz	94.500MHz	91.000MHz	
Sync. Type	Separate	Separate	Separate (Analog Only)	
Scan Type*	N/I	N/I	N/I	

14-4 Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	49.500	+/+
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	43.269	85.008	36.000	-/-
VESA, 800 x 600	35.156	56.250	36.000	+, -/+ , -
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	53.674	85.000	56.250	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1024 x 768	68.677	85.997	94.500	+/+
VESA, 1280 x 768	47.776	60.000	79.500	-/+
VESA, 1280 x 1024	63.194	59.957	91.000	+/-
VESA, 1360 x 768	47.712	60.000	85.500	+/+

Table 2. Reduced Blanking Timing Mode(Available in analog Mode Only)

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
SXGA, 1280 x 1024	63.194	59.957	91.000	+, -

14-5 Panel Description

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LT140X1-002	BN07-00004A	SA	BN68-00239H	-
SEC	LT150XS-L01	BN07-00009A	SB		-
SEC	LT150XS-L01-B	BN07-00022A	SC		-
SEC	LTM150XS-L02	BN07-00005A	SD		-
SEC	LT181E2-132	BN07-00001A	SE		-
SEC	LT150XS-T01	BN07-00010A	SF		-
SEC	LTM181E3-132	BN07-00019A	SG		-
SEC	LT170E2-131	BN07-10001D	SH		-
SEC	LT181E2-131	BN07-10001E	SJ		-
SEC	LTM170E4-L01	BN07-00018A	SK		-
SEC	LTM240W1-L01	BN07-00015A	SL		-
SEC	LTM213U3-L01	BN07-00016A	SM		-
SEC	LTM150XH-L01	BN07-00026A	SN		-
SEC	LTM150XH-L03	BN07-00027A	SP		-
SEC	LTM150XS-L01	BN07-00032A	SQ		DELL(ZPD)
SEC	LTM181E4-L01	BN07-00034A	SR		PVA
SEC	LTM170EH-L01	BN07-00036A	SS		TN
SEC	LTM170E5-L01	BN07-00037A	SU		PVA
SEC	LTM150XH-L11	BN07-00041A	SV		-
SEC	LTM213U4-L01	BN07-00039A	SW		PVA
SEC	LTM150XH-L01(ZPD)	BN07-00045A	SX		ZPD
SEC	LTM150XH-L04	BN07-00046A	SY		New panel with high brightness
SEC	LTM170W1-L01	BN07-00047A	SZ		Panel for TV
SEC	LTM150XH-L06	BN07-00053A	EA		Panel for TV/ High luminance for 450cd _
SEC	LTM153W1-L01	BN07-00054A	EB		SONY&EOS Team Panel for TV
SEC	LTM170EH-L05	BN07-00055A	EC		Use NIKE MODEL
SEC	LTM170E5-L03	BN07-00056A	ED		Panel EOS proj. for high brightness of 17" EH-L05
SEC	LTM190E1-L01	BN07-00057A	EE		Dell 1702FP pro. E4. EH
SEC	LTM181E5-L01	BN07-00061A	EF		mechanicalCompatible
SEC	LTM150XP-L01	BN07-00065A	EG		DELL 1900 FP
SEC	LTM240W1-L02	BN07-00062A	EH		18" narrow bezel GH18PS
SEC	LTM170EU-L01	BN07-00071A	EJ		AMLCD PVA PANEL
SEC	LTM170E5-L04	BN07-00072A	EK		Panel for 15" Wide TV
SEC	LTA220W1-L01	BN07-00074A	EL		Slim design, TN
SEC	LTM170E6-L02	BN07-00075A	EM		E5-L04 6 bits FRC... for IBM
SEC	LTM170W1-L01	BN07-00082A	EN		Panel for 22" TV
SEC	LTM170EH-L01	BN07-00080A	EP		AMLCD Narrow & slim design 17" PVA mode
SEC	LTM170E5-L01	BN07-00081A	EQ		LTM170W1-L01 ZPD panel
SEC	LTM170EH-L05	BN07-00083A	ER		LTM170EH-L01 ZPD panel
SEC	LTM170E5-L03	BN07-00084A	ES		LTM170E5-L01 ZPD panel
SEC	LTM170EU-L01	BN07-00085A	ET		LTM170EH-L05 ZPD panel
SEC	LTM170E5-L04	BN07-00086A	EU		LTM170E5-L03 ZPD panel
SEC	LTM170E6-L02	BN07-00087A	EV		LTM170EU-L01 ZPD panel
SEC	LTM150XH-L06	BN07-00091A	EW		LTM170E5-L04 ZPD panel
SEC	LTM153W1-L01	BN07-00092A	EX		LTM170E6-L02 ZPD panel
SEC	LTM170W1-L01	BN07-00100A	EY		Color coordinates change for LCD TV
SEC	LTM170EH-L05	BN07-00097A	EZ		AMLCD WIDE 15",9/10
SEC	LTA400W1-L01	BN07-00109A	S1		AMLCD WIDE 15",9/10
SEC	LTM153W1-L01	BN07-00110A	S2		Color Coordinates change code management
SEC	LTM150XH-L06	BN07-00111A	S3		LTM170E5-L05 Color Coordinates Change Panel Code
SEC	LTM170W1-L01	BN07-00112A	S4		PANEL of AMLCD 40" TV
SEC	LTM170EH-L05	BN07-00113A	S5		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM170W1-L01	BN07-00112A	S4		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM170EH-L05	BN07-00113A	S5		Color coordinates change 0.280/0.290, 10000k & ZPD Panel

14 Reference Information

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LTM220W1-L01	BN07-00114A	S6		ZPD Panel for AMLCD 22" TV
SEC	LTM150XH-L06	BN07-00117A	S7		ZPD Panel code
SEC	LTM153W1-L01	BN07-00118A	S8		ZPD Panel code
SEC	LTM170WP-L01	BN07-00119A	S9		PVA Panel for NIKE
SEC	LTM213U4-L01	BN07-00039A	E1		21.3" NARROW
SEC	LTA260W1-L01	BN07-00121A	E2		VENUS
SEC	LTA220W1-L01	BN07-00074B	E3		Panel B-level panel code for 22" TV Panel
SEC	LTA320W1-L01	BN07-00108A	E4		Panel for AMLCD 32" TV
SEC	LTM213U4-L01	BN07-00124A	E5		NARROW BEZEL 21 " PANEL
SEC	LTM170E6-L04	BN07-00129A	E6		HIGHLAND 17" LOW PANEL (Panel only for TCO03)
SEC	LTM190E1-L01	BN07-00088A	E7		LTM190E1-L01 ZPD panel
SEC	M150X4-L06	BN07-00137A	E8		15" Narrow & Slim panel
SEC	LTA170V1	BN07-00139A	E9		17" Panel for Muse 4:3 VGA TV
SEC	LTM190E1-L02	BN07-00128A	E10		New Panel from AMLCDI, Specification : 6bit
Driver IC					
SEC	LTM170EX-L01	BN07-00143A	E11		Development new Panel from AMLCD
SEC	LTM170E8-L01	BN07-00144A	E12		Development new Panel from AMLCD
SEC	LTM170E6-L04	BN07-00129B	E13		ZPD panel for AMLCD (Panel only for
TCO03)					
SEC	LTA320W1-L02	BN07-00108B	E14		Creat B-level Panel code for AMLCD 32" TV
SEC	LTM190E1-L03	BN07-00151A	E15		Development new 19" Panel form AMLCD (Panel only for TCO03)
SEC	LTM240W1-L03	BN07-00134A	E16		AMLCD 24" panel development
SEC	LTM190E1-L02	BN07-00128B	E17		New Panel from AMLCD, Specification : 6bit Driver IC(ZPD)
SEC	LTM190E4-L01	BN07-00145A	E18		AMLCD 24" new panel development
SEC	LTM170E8-L01	BN07-00158A	E19		ZPD code derivation
SEC	LTM170EX-L01	BN07-00159A	E20		ZPD code derivation
SEC	LTM190E1-L03	BN07-00151B	E21		Creat new panel code for AMLCD 19" (Panel only for TCO03)
SEC	LTA460H1-L01	BN07-00157A	E22		creat panel code for AMLCD 46" TV
SEC	LTM170EU-L11	BN07-00160A	E23		creat new panel code for AMLCD 17" (Panel only for TCO03)
SEC	LTM240W1-L03	BN07-00134B	E24		24" panel ZPD code derivation
SEC	LTM190E4-L01	BN07-00145B	E25		AMLCD 19" ZPD Panel code derivation
SEC	LTM240W1-L03	BN07-00134B	E26		24" panel ZPD code derivation
SEC	LTM150XO-L01	BN07-00164A	E27		AMLCD 15" XO-L01 new panel development
SEC	LTM150XO-L01	BN07-00164B	E28		AMLCD 15" XO-L01 ZPD code derivation
SEC	LTM170EU-L11	BN07-00160B	E29		AMLCD 17" NEW panel code derivation
SEC	LTA320W2-L01	BN07-00172A	SPZ		AMLCD 32" NEW panel
SEC	LTM213U4-L01	BN07-00124B	SPZ		21.3" Narrow PANEL ZPD Panel derivation
SEC	LTM170EU-L11	BN07-00189A	STH		AMLCD EU-L11 Pb free panel code derivation
SEC	LTM170EU-L11	BN07-00189B	STZ		AMLCD EU-L11 Pb free panel ZPD code derivation
SEC	LTM240W1-L04	BN07-00188A	SPH		24" A-DCC NEW panel
SEC	LTM240W1-L04	BN07-00188B	SPZ		24" A-DCC panel ZPD code derivation
SEC	LTM190EX-L01	BN07-00191A	STH		AMLCD 19" TN NEW Panel
SEC	LTM190EX-L02	BN07-00191B	STZ		AMLCD 19" TN NEW Panel ZPD
SEC	LTA230W1-L02	BN07-00184A	SPZ		AMLCD 23" 16:9 NEW Panel
SEC	LTA260W2-L01	BN07-00185A	SPZ		AMLCD 26" 16:9 NEW Panel
SEC	LTA400W2-L01	BN07-00186A	SPZ		AMLCD 40" 16:9 NEW Panel
SEC	LTM240M1-L01	BN07-00195A	SPH		24" high brightness panel
SEC	LTM150XO-L01	BN07-00197A	STH		AMLCD 15" XO-L01 Pb free panel code
SEC	LTM150XO-L01	BN07-00197B	STZ		AMLCD 15" XO-L01 Pb free panel ZPD code
SEC	LTM170EU-L21	BN07-00202A	STZ		AMLCD EU-L21 ZPD NEW code derivation
SEC	LTA460W2-L03	BN07-00187A	SPZ		BEETOVEN 46"ZPD NEW Panel
SEC	LTM240M1-L01	BN07-00195B	SPZ		24" high brightness panel ZPD code derivation
SEC	M170EX-L21	BN07-00206A	STZ		AMLCD LTM170EX-L21 ZPD NEW code derivation
SEC	LTA460H3-L01	BN07-00200A	SPZ		AMLCD 46" LED BLU panel

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LTM170EU-L15	BN07-00214A	STZ		High brightness For AMLCD EU-L15 TV ZPD NEW code derivation
SEC	LTM170E8-L21	BN07-00218A	SPZ		AMLCD LTM170E8-L21 PVA ZPD NEW code derivation
SEC	LTM190EX-L21	BN07-00222A	STZ		DISPLAY LCD
SEC	LTM201U1-L01	BN07-00190B	SPZ		AMLCD 20.1" Normal panel ZPD code derivation
SEC	LTM190E4-L21	BN07-00223A	SPZ		HAYDN 17" PZD code PANEL derivation
SEC	LTA570H1-L01	BN07-00196A	SPZ		AMLCD 57" NEW Panel
SEC	LTM150XO-L21	BN07-00229A	STZ		AMLCD 15" XO-L21 8ms panel code
SEC	LTA260W2-L11	BN07-00239A	SPZ		AMLCD 26" 16:9 7Line NEW Panel
SEC	LTA400WS-LH1	BN07-00245A	SPZ		AMLCD 40" 16:9 SPVA 90% NEW Panel
SEC	LTM213U6-L01	BN07-00231A	SPZ		AMLCD 21.3" PVA NEW Panel Code
SEC	LTM213U6-L01	BN07-00231B	SPH		AMLCD 21.3" PVA Panel HPD Code
SEC	LTA320WS-LH2	BN07-00244A	SPZ		AMLCD 32" 16:9 SPVA 90% NEW Panel
SEC	LTA400WS-LH1	BN07-00245A	SPZ		AMLCD 40" 16:9 SPVA 90% NEW Panel
SEC	LTM190M2-L01	BN07-00227A	STZ		AMLCD 19" TN Wide NEW Panel Code
SEC	LTM201UX-L01	BN07-00249A	STZ		AMLCD 20.1" TN NEW Panel Code
SEC	LTM240M1-L02-A05	BN07-00250A	SPZ		24" High brightness Slim panel ZPD code derivation
SEC	LTA320W3-L02	BN07-00219A	SPZ		AMLCD 32" NEW FFL Panel
SEC	LTA320W2-L11	BN07-00259A	SPZ		IP Board for AMLCD 32" 16:9 NEW Panel
SEC	LTA460WS-L02	BN07-00252A	SPZ		AMLCD 46" 16:9 SPVA 72% NEW Panel
SEC	LTA400WT-L01	BN07-00264A	SPZ		-
SEC	LTM240M2-L02	BN07-00267A	SPZ		All LCD Monitor 24" wide SPVA ZPD NEW code derivation
SEC	LTM210M2-L02	BN07-00230A	SPZ		-
SEC	LTA320WT-L11	BN07-00257A	SPZ		-
SEC	LTM190EX-L21-G	BN07-00274A	STZ		AMLCD 19" TN Glare NEW Panel Code
SEC	LTA320WT-L14	BN07-00247A	SPZ		-
SEC	LTM190M2-L01-D016	BN07-00280A	STZ		AMLCD 19" TN Wide change Gamma Panel Code
SEC	LTM190EX-L31	BN07-00279A	STZ		AMLCD 19" TN NEW Panel Code
SEC	LTM190M2-L02	BN07-00287A	STZ		AMLCD 19" TN Wide High brightness NEW Panel Code
SEC	LTA400WS-L01	BN07-00246A	SPZ		Display-LCD (Div) 07AH
SEC	LTA460WS-L01	BN07-00311A	SPZ		-
SEC	LTM190E4-L31	BN07-00316A	SPZ		-
SEC	LTM170EX-L31	BN07-00278A	STZ		AMLCD LTM170EX-L31 ZPD
SEC	LTA460HS-LH1	BN07-00291A	SPZ		AMLCD 46" 16:9 FHD / 60Hz / 8bit / SPVA 92%
SEC	LTA320WT-LF1	BN07-00323A	SPZ		-
SEC	LTA460WT-L02	BN07-00284A	SPZ		AMLCD 46" 16:9 HD / 60Hz / 8bit / SPVA 72% /
SEC	LTA400WH-LH1	BN07-00271A	SPZ		AMLCD 40" 16:9 SPVA 92% 10bit 120Hz
SEC	LTM240M1-L02-D015	BN07-00331A	SPZ		-
CPT	CLAA150XG09	BN07-00141A	PA		CPT 15" Monitor new panel development
CPT	CLAA170EA02	BN07-00148A	PB		17" CPT NEW development panel
CPT	CLAA170EA02	BN07-00148B	PC		17" CPT ZPD panel code derivation
CPT	CLAA150XG09	BN07-00141B	PTZ		CPT 15" panel ZPD code derivation (GOYA-PJT)
CPT	CLAA150XP01	BN07-00173A	PTH		CPT 15" PSWG code derivation
CPT	CLAA150XP01	BN07-00173B	PTZ		CPT 15" PSWG panel ZPD code derivation
CPT	CLAA170EA07	BN07-00174A	PTH		CPT 17" PSWG code derivation
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17" PSWG type New Panel code
CPT	CLAA170EA07Q	BN07-00220A	PTZ		CPT 17" PSWG R/T 8msec code derivation
CPT	CLAA170EA07Q	BN07-00220B	PTH		CPT 17" PSWG R/T 8msec HPD code derivation
CPT	CLAA150XP01F	BN07-00236A	PTZ		CPT 15" PSWG panel ZPD & Lead free code derivation
CPT	CLAA201WA03Q	BN07-00269A	PTZ		CPT 20.1" wide TN ZPD New code derivation
CPT	CLAA320WA01	BN07-00276A	PMZ		CPT 32" 16:9 MVA 8bit 60Hz / Panel brown
CPT	CLAA170ES01	BN07-00261A	PTZ		CPT 17" Slim TN ZPD Type New code derivation
CPT	CLAA070VA02	BN07-00265A	PTZ		CPT Panel code derivation for Digital Album
TOSHIBA	LTM15C419(A)	BN07-00002A	TA		-

14 Reference Information

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
TOSHIBA	LTM15C423(B)	BN07-00006A	TB		-
TOSHIBA	LTM18C161	BN07-00008A	TC		-
TOSHIBA	LTM15C443	BN07-00031A	TD		-
TOSHIBA	LTM15C458	BN07-00043A	TE		-
TOSHIBA	LTM15C458S	BN07-00077A	TF		TSB 15" high brightness Panel
TOSHIBA	LTM15C458	BN07-00078A	TG		Toshiba ZPD panel
TOSHIBA	LTM15C458S	BN07-00099A	TH		TSB LTM15C458S (ZPD)
HANNSTAR	HSD150MX41A(A)	BN07-00020A	NA		TTL type
HANNSTAR	HSD150MX12	BN07-00030A	NB		TTL type
HANNSTAR	HSD170ME13	BN07-00180A	NTH		Hannstar 17" TN new panel development
HANNSTAR	HSD170ME13	BN07-00180B	NTZ		Hannstar 17" TN new panel development
HANNSTAR	HSD190ME12	BN07-00210A	NTZ		Hannstar 19" TN new panel development
HANNSTAR	HSD150MX17-A	BN07-00226A	NTZ		Hannstar 15" slim panel ZPD code derivation
HANNSTAR	HSD190ME12-A10	BN07-00256A	NTZ		Hannstar 19" TN PSWG 8ms new panel
HANNSTAR	HSD190ME13-D11	BN07-00270A	NTZ		Hannstar 19" TN Slim 5ms new panel development
TORISAN	TM150XG-22L03(A)	BN07-00021A	RA		-
TORISAN	TM150XG-26L06	BN07-00042A	RB		-
TORISAN	TM181SX-76N01	BN07-00048A	RC		-
TORISAN	TM150XG-26L06	BN07-00059A	RD		15" XGA TN MODE(ZPD)
TORISAN	TM290WX-71N31	BN07-00063A	RE		RS24NS (TORISAN 29" NEW PANEL)
TORISAN	TM396WX-71N31	BN07-00064A	RF		RS24NS (TORISAN 40" NEW PANEL)
TORISAN	TM150XG-26L09	BN07-00073A	RG		Panel for 15" TV
TORISAN	TM150XG-26L10	BN07-00089A	RH		L10(change except D/IC) ZPD
TORISAN	TM150XG-26L10	BN07-00090A	RJ		L10 NORMAL
TORISAN	TM190SX-70N01	BN07-00098A	RK		Torisan 19" Panel
TORISAN	TM181SX-76N01	BN07-00106A	RL		ZPD Panel code
TORISAN	TM190SX-70N01	BN07-00107A	RM		ZPD Panel code
TORISAN	TM290WX-71N31	BN07-00115A	RN		Color Coordinates change panel for
TORISAN 29" TV					
TORISAN	TM396WX-71N31	BN07-00116A	RP,Q		Color Coordinates change panel for
TORISAN 40" TV					
TORISAN	TM220WX-71N31	BN07-00125A	RR		Development TORISAN 22" TV PANEL (ZPD)
TORISAN	TM220WX-71N31	BN07-00127A	RS		Development TORISAN 22" TV PANEL
TORISAN	TM396WX-71N32A	BN07-00150A	RT		120V inverter Exclusive panel
TORISAN	TM190SX-70N02	BN07-00154A	RMH		Torisan 6bit panel code Derivation
TORISAN	TM190SX-70N02	BN07-00154B	RMZ		Torisan 6bit panel code Derivation
TORISAN	TM150XG-A01	BN07-00162A	RTH		Torisan 15" Narrow & Slim panel development
TORISAN	TM150XG-A01	BN07-00162B	RTZ		Torisan 15" N&S panel ZPD code derivation
SHARP	LQ181E1DG11(A)	BN07-10001C	PA		-
SHARP	LQ150X1LW71	BN07-00067A	PB		SHARP 15" PVA PANEL
SHARP	LQ370T3LZ41	BN07-00216A	FAZ		Rome2
HITACHI	TX38D12VC0CAA(A)	BN07-00003A	HA		-
HITACHI	TX43DVCOCAB	BN07-00060A	HB		17" SXGA PVA MODE
HITACHI	TX43D15VC0CAB	BN07-00101A	HC		ZPD Panel
HITACHI	TX51D11VC0CAB	BN07-00122A	HD		20.1" NARROW
HITACHI	TX54D11VC0CAB	BN07-00123A	HE		21.3" NARROW
HITACHI	TX80D12VC0CAB	BN07-00169A	HIZ		Development new panel for Hitachi 32" TV
HITACHI (ZPD)					
HITACHI	TX54D11VC0CAB	BN07-00123B	HIZ		Hitachi 21.3"ZPD panel

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
IBM	ITSX94S	BN07-00017A	IA		-
UNIPAC	UM170E0	BN07-00028A	UA		Loaded by cisdba
HYUNDAI	HT15X13	BN07-00035A	DA		-
HYUNDAI	HT17E11-200	BN07-00049A	DB		TN MODE
HYUNDAI	HT17E11-300	BN07-00093A	DC		HT17E11-300 ZPD panel
HYUNDAI	HT17E11-400	BN07-00094A	DD		HT17E11-400 normal panel
HYUNDAI	HT17E11-400	BN07-00095A	DE		HT17E11-400 ZPD panel code
HYUNDAI	HT17E12	BN07-00096A	DF		HT17E12 (Narrow & slim Design)
HYUNDAI	HT17E12	BN07-00105A	DG		ZPD Panel code
HYUNDAI	HT15X15-D00	BN07-00146A	DH		Development for Ares 15" Hydys TV
HYUNDAI	HT15X15-D01	BN07-00146B	DJ		Derivation panel HPD for Ares 15" Hydys TV
HYUNDAI	HT17E13-100	BN07-00167A	DTH		PINEHURST-2(IBM) PJT 17" HYDIS PANEL
Derivation					
HYUNDAI	HT17E13-100	BN07-00167B	DTZ		PINEHURST-2(IBM) Hydys 17" ZPD code
Derivation					
HYUNDAI	HT170EX1-100	BN07-00240A	DTZ		17" EX compatible Hydys Slim panel develop-
ment					
HYUNDAI	HT201V01-100	BN07-00263A	DTZ		Hydis 20.1" 4:3 VGA Mode TN NEW Panel
HYUNDAI	HT170EX1-101	BN07-00266A	DTZ		17" EX compatible Hydys Slim panel multi channel IC
NEW Derivation					
ACER	L170E3	BN07-00044A	AA		TN(ADT)
ACER	M170EN05	BN07-00076A	AB		AU 17" Panel (Narrow & slim design)
ACER	M170EN05	BN07-00102A	AC		ZPD Panel code
ACER	M190EN02	BN07-00170A	AMH		AU Monitor 19" new panel development (P19-
1S)					
ACER	M190EN02	BN07-00170B	AMZ		AU 19" ZPD code derivation (ZPD)
ACER	M170EN06	BN07-00171A	ATH		AU Monitor 17" New panel development
ACER	T260XW01	BN07-00163A	AMZ		AU 26" new panel development (NF26EO)
ACER	A201SN01	BN07-00177A	ATZ		AU TV panel 20.1" TN SVGA new panel
development					
ACER	M170EN06	BN07-00171B	ATZ		AU Monitor 17" ZPD code Derivation
ACER	T315XW01	BN07-00194A	AMZ		New AU 32"
ACER	M170EG01	BN07-00192A	ATH		AU TN PSWG type New Panel code
ACER	M170EG01	BN07-00192B	ATZ		AU TN PSWG type New Panel ZPD
Derivation code					
ACER	M190EN04	BN07-00203A	ATH		AU Monitor 19" ZPD New code Derivation
ACER	T260XW02	BN07-00208A	AMZ		AUO 26"
ACER	M170EG01 V8	BN07-00221A	ATZ		AU TN PSWG type New Panel (8msec) ZPD
Derivation code					
ACER	T260XW02	BN07-00233A	AMZ		AUO 26" New Panel (Cosmetic spec down
grade)					
ACER	T315XW01	BN07-00234A	AMZ		AUO 32" New Grade (Cosmetic spec down
grade)]					
ACER	M190EN03	BN07-00224A	AMZ		AU Monitor 19" MVA New code Derivation
ACER	T315XW01	BN07-00237A	AMZ		New LCD TV VE project : delete DBEF sheet *
Panel, model division					
ve					
ACER	T315XW01	BN07-00238A	AMZ		New LCD TV VE project : delete DBEF sheet +
'A-' grade					
ACER	M201UN02 V3	BN07-00168A	AMZ		-
ACER	M201UN02 V3	BN07-00168B	AMH		-
ACER	M190EN04 V7	BN07-00248A	ATZ		AU Monitor 19" TN Glare ZPD New code
Derivation					
ACER	A070VW01	BN07-00235A	ATZ		New Panel code Derivation for Digital Album
ACER	T315XW01	BN07-00253A	AMZ		LCD TV VE item model * Panel, Model division add

14 Reference Information

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
version: T315XW01					
ACER	T260XW02	BN07-00254A	AMZ		AUO 26" VE item apply model
ACER	M170EU01	BN07-00260A	ATZ		AUO 17" Slim TN ZPD Type New code
Derivation					
ACER	T370XW01	BN07-00255A	AMZ		for ROME 37" model development
ACER	T315XW02(V3),	BN07-00324A	AMZ		-
CHIMEI	M170E3-L01	BN07-00050A	CA		TN PANEL
CHIMEI	M150X3-L01	BN07-00051A	CB		COMPATIBLE
CHIMEI	M170E4-L01	BN07-00052A	CC		MVA PANEL
CHIMEI	M150X2-L01	BN07-00066A	CD		CHIME 15" PVA PANEL
CHIMEI	M150X3-L01	BN07-00079A	CE		Chimei ZPD panel
CHIMEI	M170E3-L01	BN07-00103A	CF		ZPD Panel code
CHIMEI	M170E4-L01	BN07-00104A	CG		ZPD Panel code
CHIMEI	V296W1-L01	BN07-00120A	CH		MVA
CHIMEI	M170E6-L02	BN07-00126A	CJ		HIGHLAND 17" LOW PANEL
CHIMEI	M190E2-L01	BN07-00131A	CK		GH19AS,BS CHIMEI PANEL
CHIMEI	M150X4-L06	BN07-00137A	CL		15" Narrow & Slim panel
CHIMEI	M170E6-L01	BN07-00133A	CM		2003-03-11 vendor change
CHIMEI	M170E6-L01	BN07-00133B	CN		ZPD derivation panel
CHIMEI	V201V1-T01	BN07-00135A	CP		CHIMEI 20.1" panel development
CHIMEI	M170E6-L02	BN07-00126B	CQ		HIGHLAND 17" LOW PANEL ZPD derivation
panel					
CHIMEI	M170E6-L05	BN07-00152A	CR		CMO 17" new panel development code
CHIMEI	M170E6-L05	BN07-00152B	CS		CMO 17" ZPD panel code derivation
CHIMEI	M150X4-L06	BN07-00137B	CT		Chimei 15" Narrow & Slim panel ZPD deriva-
tion					
CHIMEI	M170E5-L05	BN07-00165A	CTH		CMO 17" new panel development code
(GOYA2-PJT)					
CHIMEI	M170E5-L05	BN07-00165B	CTZ		CMO 17" ZPD panel(GOYA2-PJT)
CHIMEI	V230W1-L02	BN07-00209A	CMZ		CMO 23" new development
CHIMEI	V320B1-L01	BN07-00207A	CMZ		CMO 32" new development
CHIMEI	V270W1-L01	BN07-00136A	CMZ		CHI MEI 27" panel development
CHIMEI	M190E5-L0A	BN07-00213A	CTZ		-
CHIMEI	M190E3-L0A	BN07-00212A	CMZ		CMO M190E3-L0A MVA Type New code
derivation					
CHIMEI	M170E7-L01	BN07-00232A	CTZ		CMO 17" Slim TN ZPD Type New code
derivation					
CHIMEI	M190A1-L01	BN07-00228A	CTZ		CMO 19" Wide TN ZPD Type New code
derivation					
CHIMEI	V201V1-T03	BN07-00275A	CTZ		CMO 20.1" (V201V1-T01) VE model
CHIMEI	M201P1-L01	BN07-00268A	CTZ		CMO 20.1" TN ZPD derivation
NEC	SVA150XG04TB	BN07-00225A	BTZ		SVA NEC 15" panel ZPD code
NEC	SVA170SX01TB	BN07-00272A	BTZ		SVA NEC 17" panel ZPD code Brown